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The Work of the Progressive Practical Farmer.

From an Essay by Hon. JAMES D. WATTERS, read before the Deer Creek Farmers' Club.

No fact in nature can be too insignificant for our attention. The fact is, we are apt to try to grasp too much, so that we get nothing. We would become great mathematicians by beginning with the calculus instead of starting with the definitions and axioms. I read an account, a few days ago of a man who was working in a rolling mill, when his tongs became fastened in the molten metal so that they were drawn through the rollers. An examination of what was left of his tongs revealed to the man a fact unknown to him before, and this gave him an idea which resulted in the discovery of a new process which not only brought the man wealth but was useful to the world. It is possible that the uprooting of a shrub may disclose a gold mine, but it amounts to nothing unless there are keen eyes as well to discover the shining metal when it is laid bare.

There is no reason why the discoveries of science in other departments should not be applied to agriculture where such application is practicable. But the practical farmer is the one who is brought face to face with the facts and phenomena in connection with his calling, and upon his intelligence the real advancement of agriculture must ultimately depend. It is always safe to make use of well-ascertained facts from whatever source they may come, but the practical farmer who attempts it will soon find that it is unsafe to stake one's money upon the correctness of theories which are never broader than the facts upon which they are based. Darwin, for instance, whatever else may be thought of him, was a most careful investigator and observer of facts, and the stock breeder may safely rely upon those facts and may draw conclusions from them which are safe and useful within the scope of his business, without regard to the correctness of the theories which Darwin sought to establish. The trouble with what is called scientific farming is that the theories are made too broad for the facts which support them. Conclusions are reached from premises which are not properly interpreted. No matter how simple the reasoning may be or how logical in form, if any uncertainty lurks in one of the premises the same uncertainty must taint the conclusion. We are accustomed to laugh at the man who fed his hogs every other day, in order to get a streak of fat and a streak of lean; but I am sometimes tempted to think that that man is a true type of the so-called scientific farmer. The remedy, however, is not in discarding science, but in cultivating it. If we cannot begin at the top and build down, we may, nevertheless, begin at the bottom and build upwards. This is the work that lies before the progressive practical farmer.

Stock Breeding vs. Grain Raising.

A farmer who for a long term of years has a good paying crop four seasons out of five may consider himself in average luck, and this fact has induced many to turn their attention from grain-growing to dairy-farming. Though the prices of butter and cheese are subject to very wide fluctuations, it is not often that a farmer, having once embarked in dairy-farming, ever goes back to the growing of grain for the market. In view of the present demand for beef-cattle, however, it seems somewhat surprising that a greater number of farmers do not turn their attention to stock-breeding. Beef is a commodity with which it would seem impossible to glut the market. As the quality improves, the consumption increases, and if its price declines perceptibly, it straightway begins to take the place of some other staple article of food, so that its constituency is immediately and in most cases permanently rendered broader.

Why it is that farmers will, year after year, go on cropping their farms to death, and reaping very meagre returns, till they or their children are driven into other lines of business, while the old homestead is reduced to all but a desert, is difficult to determine. The establishment of cheese factories has done much to correct or rather lessen the tendency to over-cropping, but even dairy-farming is not so well calculated to restore land to a state of fertility as is stock-raising. The manure from a herd of cattle amply compensates the land for all that the cattle can by any possible means take from it, while experience has always shown that those farms whose only marketed product is live-stock steadily increase in fertility.

The results of grain-farming and stock-farming may be summed up as follows: The grain farmer spends his energies in getting all he can out of his land during the short space intervening between the beginning of spring's work and the end of harvest, or perhaps he may have a few acres of wheat, which he sows in the fall, and after sprouting waits till the advent of spring to renew its growth. In any event, his farm lies unproductive during the greater portion of the year, while his taxes, the interest on his investment and his family and household expenses are going on all the time. And with all this his farm is every day becoming less productive.

The stock-breeder has his work at his hand the whole year around. Some fields must be cropped with coarse grains for winter-feed, and these are more than re-fertilized by the product of manure every year. These fields have to be cultivated by farmers, but his pasture lands only require cultivation at long intervals, while, as for the rest of the work, the herd manures the land, reaps the crop, and carries it to market. The crop of the intelligent and thrifty stock-farmer is growing from the first of January to the thirty-first of December, night and day, hour by hour increasing in value, while every year sees his farm more productive

and his breeding herd more richly bred and valuable.

It is not necessary for the farmer of small means, who would turn his attention to dairying, to have a herd of Jerseys, Holsteins, or Friesians, to start with, nor for him who would breed beef-cattle to make his commencement with Polled Angus, Herefords, or Shorthorns. He can make a beginning with what he happens to have, and improve his herd just as rapidly as his means will allow him to do so. In the far Northwestern Territories some full-blooded and pretty thoroughly uncivilized Indians are wealthy stock-owners, and there are certain few Canadian farmers who are not in a position to make as extensive beginnings as they did.—*Canadian Stock Breeder.*

Cement Pipes and Drain Tiles.

Messrs. Editors American Farmer:

Relying to the question of Mr. Lacey, on page 286, I can say that there is a device by which cement pipes are made, and it is very simple. But such pipes are not used for drainage, but are for conducting of sewage or water.

Drain tiles are entirely different, and must be porous, which the others are not. They must also be burned. A good way for neighborhoods, where many tiles are needed, is to get a cheap effective machine jointly and make the tiles.

The cement pipes are made by using sheet-iron moulds, an outer and inner one of the size needed, and then the grout is tamped in a little at a time by a long slender iron tamp, and when filled put aside to set. The moulds are made so as to be parted on hinges, and to make any progress many would have to be prepared of these moulds, and it would be too expensive for the individual farmer.

Cement water pipes are often made where they are to lie by using a round wood rod and withdrawing it as soon as the cement is set, and repeating till the line is completed. This will do for small diameters, say of 14 inches, but not for large pipes.

J. W. PORTER.
Albemarle Co., Va., Oct. 28, 1884.

Millo Maize.

A correspondent in Alabama writes as follows of Millo Maize:

Millo Maize on a small scale has been cultivated on my farm for two seasons. Last year it was planted April 15, on thin, gray sandy land, in rows three feet wide and one stalk to the hill, hills three feet apart. It tillered out well, some hills having over twenty stalks. A part of it I cut five times and fed as green food to my cattle. One cow running on the range was giving only three quarts of milk per day, but after being fed on it ten days, gave ten quarts. I reserved a part of the crop for seed, intending to have some of it ground into meal that we might try the bread made from it, but there came a three months' drought and it failed to mature, and I cut down the last of October and made hay of it. My stock ate

the hay ravenously—not leaving even the hard stalk. All kinds of stock—horses, mules, cows, sheep, etc.—are fond of it. This year it was planted on medium mulatto land. Two crops of hay have already been saved from it and another is nearly ready for the sickle. That left for seed has matured and is housed.

A Texas contributor says: I procured a few ounces of seed, and planted it on the 10th day of March, in rows four feet apart, and allowed two plants to grow every two and a half feet in the rows. Where they were too thick I pulled some out during wet weather and transplanted them somewhere else. I cultivated it like we do corn. On the 23d and 28d of April we had slight frosts, but the young plants did not suffer much. May 21, when they were already two or three feet tall and largely sprouted, a hall-storm came and injured the stalks so that I had to cut the larger ones off. From May 27 until September 24, no rain fell, and yet during this long drought it remained green, though it did not produce very many seed bunches fully developed. All those stalks withered away during the drought, or had imperfect seed bunches, I cut down for fodder. Cattle and horses like it very much, but I believe that for fodder in general, sorghum (China or Early Amber sugar cane) sowed broadcast at the rate of one and a half or two bushels per acre, is to be preferred to Millo Maize, although the latter is of more worth in reference to the seed than sorghum and it can stand the drought better. The Millo Maize stalks still standing (not the new sprouted ones), may yet produce good seed, as we have sufficient rain now.

The Virginia State Agricultural Fair of 1884.

By B. PURYEAR, LL. D., Professor of Chemistry in Richmond College.

It was not a decided success nor altogether a failure. It commenced Wednesday, October 22d, and closed on the Friday following. The attendance on Wednesday was small; the day, from excessive dust, being the most disagreeable day we had during the present protracted drought. On Wednesday evening, a shower fell, which laid the dust fairly, and on Thursday we had a most pleasant day. The attendance was, of course, much larger than on the preceding day, both because of good weather and superior attractions.

The exhibit, in several important respects, was poorer than I have ever seen it. I did not see a Holstein or a Devon cow; there were but few Short-horns and these few, with a single exception, were hardly creditable to the occasion.

Mr. Rowe, of Fredericksburg, had on exhibition a splendid herd of pure Jerseys, quite a number of them being imported. These cattle were in fine condition, and took a large number of premiums. Mr. Moorewood, of Albemarle county also had a few fine Jerseys.

As far as I could judge, the display of horses of every description, was both in

numbers and style, far below the standard of our State Fair.

The sheep and hogs I did not notice with much particularity, but noted many vacant pens, which heretofore have been generally occupied.

The display of machinery was good, the exhibitors numerous. The steam plowing was the marked and noticeable feature of the Fair. Plowing by steam is new to us, and the work of the steam plow attracted large and close attention.

Geiser & Co., of Waynesboro', Pa., exhibited "The Peerless," and Frick & Co., of the same place, "The Eclipse."

The Peerless engine is a 15 horse power and moves 6 plows. The price of it is \$2,300. The Eclipse is a 12 horse power and carries 4 plows. Price \$1,700. Two men, it is claimed, are enough to manage one of these steam plows, whose combined wages in the North are only \$8.00 per day. The total cost of operating an engine per day, embracing wages, oil, fuel, etc., is put at \$10.

The Peerless claims that it can plow 26 acres per day, when all the circumstances are favorable, an estimate which seems to me extravagant. The Eclipse claims that it can turn over 15 acres per day, which I judge it can when the area is large, level, and free of rocks and stumps.

Each single plow cuts 14 inches, so that the 6 plow engine turns over 84 inches at a time; and the 4 plow engine, 56 inches. I noticed the work closely. The land plowed was in turf and has had since August 1st only 1½ inches of rain. The Eclipse turned up the dirt to the depth of 8 or 9 inches, and pulverized it well. A heavy drag would put the land in good condition for sowing wheat. The Peerless (6 plows) did not go deeper than 8 or 4 inches, frequently less, and laid the furrows solid and separate. The pulverization, in consequence, I suppose of the shallowness of the plowing, was very imperfect.

Cut on the prairie lands of the West, steam plowing may be carried on with advantage. The conditions are favorable also in certain portions of the South, where large areas of flat alluvial land are found. It is not to be expected that, under any circumstances, or anywhere, the farmer is to have his own steam plow. Plowing, under the new régime which the steam plow is expected to introduce, must be done as wheat is thrashed. The steam plow man must follow the lands of his community and this must be his business and his living.

Under favorable circumstances, the relative cost of plowing by steam and plowing by mules will certainly be largely in favor of steam. The cost of the engine is to be compared with the cost of mules doing the same work, and the feed of the engine—water, coal and oil—is to put against the feed of the mules—grass and grain. Wherever the engine can find adequate employment, both these points will be in its favor. Again. The mules must eat and be cared for all the time, whether at work or idle; the engine stops eating when it stops work. If put away in good order, it suffers no loss and involves no expense while idle.

The steam power may be used for various purposes besides plowing. By it, lumber may be sawed; wheat, thrashed; grain, ground.

Agriculture is the most stationary of all our industrial pursuits. Perhaps, the day is near at hand, when under the hot breath of steam, it will be stimulated into new activity, and at length be conducted with that precision and system which characterize other departments of labor.

Sundry reasons are given to explain the evident decline this year in the State Fair. It is the year of the presidential contest, when politics absorb the public attention vastly more than plows and threshers, cattle and horses. Again. We have had less than

9 inches of rain since August 1st, and here the great drought is still unbroken. This cause had a double effect, both disqualifying the farmers for making a good exhibit, but also it so discouraged and disheartened them that they did less than they might have done. But after making full allowance for these disturbing causes, it must yet be conceded that the general interest of the public in our State Fair is on the wane. The fact is the poverty of our people is the trouble in the way. With lean larders and lank purses, they are solemn and not hilarious. They don't feel gay and festive, as once they did, and don't care to meet great crowds when their threadbare coats advertise the hard pressure of contracted means.

Law for Farmers.

We consider the obligations of the farmer to hired men, which are independent of the contract of hiring.

THE EMPLOYER'S DUTIES.—There are certain general duties of a master to his men, which, if not faithfully performed, render the master liable for the injury resulting to the men from such failure: 1. To exercise due care in the hiring and retention of employees. 2. To exercise due care in the purchasing and retention of machinery. 3. To exercise due care in keeping his buildings and premises in safe and proper condition. 4. To exercise due care not to expose his men to other than the ordinary risks of the business for which they hired. These general duties of the last group fall naturally under the following heads:

INJURIES BY CARELESS FELLOW-WORKMEN.—One of the risks which a workman assumes when he engages in any employment, is that which arises from carelessness on the part of his fellow-workmen. If two farm hands, both presumably competent, are set to work together, and one carelessly injures the other, the injured workman has no claim therefor upon the master. But if the master failed in the first duty above set forth, i. e., if he hired a man whom he knew to be incompetent, or if he did not exercise due care to ascertain that the man was competent, then he, the master, would be liable for injury suffered through such incompetence by another workman, without fault on the part of the latter. To illustrate: Suppose a farmer hires a careless boy, and sets him to driving a spirited team; if the boy by his carelessness allows the team to run away and injure another workman, the farmer will be liable. He has here failed in his duty to exercise proper care in the selection of his employees. But if he had used the caution of an ordinarily prudent man in selecting a person competent to drive the team, and the man so selected had still proved careless and allowed the team to run away and injure a workman, the master would be relieved from liability for the damage done.

INJURIES BY DEFECTIVE MACHINERY, BUILDINGS, ETC.—The second and third duties of the master require him to exercise care in the purchase and retention of machinery, and in keeping his buildings and premises in a safe condition. If he fails in these duties, and such failure results in injury to a workman without negligence on the workman's part, the master is liable for the damage done. But here it must be observed that if the defects in the machinery or buildings are open and perfectly apparent to the workman, so that by the exercise of care on his part he can avoid the dangers arising from them, he cannot recover damages if he is injured in consequence. By engaging in the employment he voluntarily encounters the dangers which he can see, and, by prudence, avoid. Many of the defects, however, in machinery and buildings, are of an unseen and latent character, and not apparent to the ordinary observer. The servant does not, and cannot be expected to investigate

at every step to know that he is treading on safe ground. If he is injured by reason of such a defect, and the defect is known, or ought to be known to the employer; that is, if ordinary care and prudence on his part would have discovered the defect, the master is liable. This is well illustrated by a case in New York, where a portion of a mill fell because the timbers and supports under it were allowed to become defective. The Court held that ordinary care on the part of the owner required him to find out such defects and remedy them, and that failure of this duty rendered him liable to the injured operatives (24 N. Y., 410). Where latent defects are known to the servant, and he calls the master's attention to them, and the master promises to repair them, that is sufficient for the servant. He may then continue at the work, and if he is injured the master will be liable (106 Mass., 282).

RISKS NOT INCIDENT TO THE EMPLOYMENT.—As has been stated, when a man engages in any kind of business he voluntarily assumes all the ordinary risks and dangers incident to that business. Thus a sailor takes the chances of wind and wave, a miner the risk of being choked by fire-damp, a builder that of falling from the scaffold, or a painter the chances of getting the painter's colic. All these ordinary risks are presumed to have been considered in making the contract of hiring and the compensation to have been arranged accordingly. If an injury results from one of them to the workman, it can only be regarded as an accident and the misfortune must follow him (28 Vt., 59). But the employee does not undertake to run any risks not incident to the employment for which hired; and if he is put to other work, and is there injured without fault on his part, the master is liable. To illustrate: Suppose a farmer hires a man to work on a farm; the man after working for a time on the farm is, without any new contract, put to work in a saw-mill which the farmer also owns. Not being used to the work, he is injured by one of the risks incident to the latter employment, the farmer will be liable for the damages caused by the injury. It is true the man could have refused to work in the mill when requested to do so; but his primary duty was obedience, and he undertook no additional risk by obeying the master's orders.—*Am. Agriculturist.*

The Virginia Tobacco Crop.

Major R. L. Ragland, of Halifax, gives in the *Western Tobacco Journal* his estimate of this year's crop in Virginia. His summing up is as follows:

The dark export crop is a failure. A large percentage of the bright crop will consist of smokers, cutters and light common fillers. Twist wrappers—bright and fine enough to satisfy the most exacting—will be plentiful, but smooth, bright, fine plug wrappers and rich mahogany goods will be in lighter supply, while fillers of all grades, but the finest, will be more abundant, the heaviest percentage being of the light chaffy goods.

Altogether, the crop, though disappointing, after the once bright prospect, is a fairly good one in quality and pounds. It is clean and exceptionally free from worm holes and ragged ends, and will prove more satisfactory to manufacturers than any of the three or four preceding crops.

A new yellow variety, "Tuckahoe," proved almost exempt from burning, and the product has more body and elasticity—a quality lacking in many of the old yellow sorts—and it will be more extensively planted next year.

More tobacco sun cured this year than usual, and who objects to nice sun-cured fillers and smokers? But the man or firm who lays in at fair rates a supply of smooth, bright and rich mahogany wrappers and nutmeg sweet fillers will find such profitable to handle.

Tobacco in North Carolina.

Tobacco is now grown in eighty-seven of the ninety-six counties of North Carolina, but it is a staple in perhaps not more than a dozen of these. Rockingham, Person, Caswell and Granville counties constitute the flower of the tobacco belt, each raising in 1870 about 4,500,000 pounds, and this year the crop in each one of these is estimated at 5,000,000 to 5,250,000. The whole acreage of the State in 1882 was 64,482, and it is estimated that at least 70,000 acres are in cultivation this year. The whole tobacco crop in 1882 amounted to 32,276,792 pounds. All the leading authorities now agree that the crop of 1884 will approximate 65,000,000 pounds. But the best feature in the raising of tobacco there is that North Carolina leads the tobacco States in the average prices obtained for the leaf. As shown by the census the average price paid for North Carolina tobacco is \$14.10 per hundred pounds. Deducting \$9.33, the actual cost of production there, a net profit of \$4.77 is left for the producer. The White Burley District in Ohio yields an average profit of only \$4.30, while Pennsylvania gives \$4.13, Connecticut \$3.89, Wisconsin \$3.58, New York \$3.12, and so on down the list. The annual profit to the North Carolina farmer of more than fifty-one per cent. would indicate that the growing of tobacco is the most profitable agricultural work done on a large scale in America.

Live Stock.

Handling Cattle.

However unwise it may be to judge fruits from the outside, much of the disposition and bodily quality of an animal can be determined from its hair and skin. I know of no tests that will determine the practical value of a farm animal with greater precision and certainty than its "handling." A person who knows how much valuable information can be gained by consulting the hair and skin is often led to wonder at the difference with which these points are treated by farmers. When it is the consideration of breed instead of excellence, the hair receives its full share of attention. The Durham must not be black, the Polled Angus must not be any other color; the Jersey must be mouse colored, the Galloway black or brown, the Suffolk red. Among swine we find equal deference paid to the color of the hair. The Poland China must not be white, but the Chester White cannot be anything else; the Jersey Red must be red and the Essex black, while the Berkshire must wear a white hood and white hose.

Although we pay so much attention to the color of the hair, this is of no practical value; but the quality of the hair is of great practical value as a test. In a general way it may be said that the finer the hair the better the animal for flesh and milk in both quantity and quality. The Texan and scrub steer or cow have long, coarse hair; and as it is an established fact that in the animal kingdom nature produces a correspondence between the internal and external organs, we would suppose the flesh of the Texan and scrub to be coarse and of poor quality, which it is. On the other hand, the hair of the Jersey is fine and soft, betokening a dainty little animal producing milk, that being her leading production of superior quality. The hair of the Shorthorn and polled cattle is somewhat coarser, as it should be on a larger animal; yet it is softer and finer than the hair of the Texan, denoting that the flesh is of better quality. The scrub hog, the rail-splitter, had very coarse hair, well termed bristles, along the spine, so coarse was it; the hair of the improved breeds is finer and softer. The quality of the flesh corresponds with the hair. The sheep illustrates this point better than any other animal, because the object of domes-

tication and improvement was to demonstrate it. As a matter of fact, we unconsciously recognize it as a fact that the improvement in our farm animals is accompanied with a fining and softening of the hair. We would be surprised to find the Berkshire growing such bristles as the wood-hog sports. And we also unconsciously recognize it as a fact that quality of hair is a criterion of the quality of the flesh and milk, though we fail to avail ourselves of the practical advantages of that fact; we would count it odd if a Jersey had hair as coarse as that of a buffalo, or if under the bison's shaggy coat we should find fine, not coarse, but juicy, delicately flavored flesh.

We can turn this to practical account in the selection of individual animals. Always bearing in mind that animals of some breed have slightly coarser hair than of others, we will get the best flesh or the best milk by selecting the animal with fine, silky hair. I consider this of the most importance among cattle, and in the selection of cows I would pay more attention to the quality of the hair than to the way it happened to grow upon the escutcheon.

It will be found that there is a wide difference in the hair of different animals. The coarse haired animal will be found to fatten slowly, to yield flesh and milk of poor quality, though of an improved breed; on the contrary, some scrubs have fine hair and these fatten easily. A disposition of the hair to curl (which must not be confounded with kinkiness), is a good sign. A pig with such hair is a fat pig, a steer with such hair matures early and fattens easily, and a cow with such hair yields rich milk. Straight, stiff hair, which is thinly and lankly distributed over the surface, indicates a hard skin, which is a bad sign.

The skin forms a yet better test than the hair. The two are intimately connected and the quality of the hair can be determined from that of the skin, and vice versa. Fine, soft hair grows upon a fine, soft skin, which covers fine flesh; coarse, straight hair grows upon a coarse, hard skin, which covers coarse, hard flesh.

The "touch," or "handling" of an animal has always been considered a most important test by breeders. It was the greatest test of the Collings brothers. An animal that handled well they prized, one that did not handle well they rejected. Thus it said that while the one brother was the more enterprising, the other excelled him because he could more accurately discriminate among and judge of the handling of animals. In fact, we find that the early breeders and improvers of stock paid much attention to handling; it was their first and their last test. They were wise men. They founded their efforts at improvement upon a knowledge of animal physiology; they knew how intimately the organs were related, and how well those not seen could be judged by those visible. They were wiser than we who pay more attention to color of hair, shape of horn, and perfectness of pedigree.

The butcher tells the quality of the flesh, and the stock-grower the aptitude of the animal to fatten, by the "touch." They can do this because practice has educated their fingers. Any intelligent, sensible person can learn; but he can learn only by practice. It is hard to give the first lesson, the A-B-C, in words, and yet this must be given in words. It is difficult for me to describe the peculiar sensations of varying degrees of softness and elasticity that are produced by the pressure of the hand upon the bodies of different animals, though mentally I can distinguish these well enough. It may be said that if the touch reveal a thick, hard skin, adhering firmly to the muscles, the animal is a hard grazer, a difficult and obstinate feeder, slow to put on fat, and, of course, juiceless flesh. The other extreme is to be avoided. If the skin is papery, flaccid

flabby or loose in the hand, the flesh of the animal will be flabby, the animal itself will be delicate and likely unable to retain fat. But if the skin is elastic, velvety, soft, pliable, presenting to the touch a gentle resistance, but so delicate as to give pleasure to a sensitive hand, giving an indentation from the pressure of the fingers, but rising to its place by a gentle elasticity, you may be sure the animal is a good feeder and will yield flesh or milk of good quality. Observe that the skin may be mellow from disease; but if so the skin will rise slowly in the indentations, not exhibiting the elastic spring of a healthy skin.

I am sure that my readers have noticed that a cow with a rich golden and mellow skin is a good milker, giving milk of rich quality. Touch as an indication of fattening qualities is not confined to cattle. Hogs that fatten readily, display the soft and mellow touch. This distinguishes some entire breeds, as the Chinese and Siamese, which fatten with unusual readiness. And among wild animals we will find this touch indicating a disposition to lay on fat, as in the case of the bear and opossum.—*N. England Farmer.*

Fall Feeding for Cows.

It is the part of wisdom to give immediate attention to the adequate feeding and care of all the live stock, but especially to the cows. The present season "between grass and hay" is peculiarly distressing to cows which labor under special disadvantages. An animal that is milking suffers more from inadequate feeding and care than any other, because the general system suffers before the milk secretion ceases. A cow will milk down to skin and bone before the udder ceases to exhaust the system, and much injury may be done before it is suspected, if the supply of nutriment is lessened. We say nutriment rather than food, because there is food that is not nutriment, and this is specially true just now, when the grass is ripe and the weeds that too often furnish the fall feeding are hard and devoid of nutritious substance.

The local papers are now giving on every hand, the usual reports of the season; black leg here, splenic fever there, "a mysterious and fatal disorder" in other places; "red water," "dry murrain," mad itch, and all the other diseases which are rife every fall and spring. This is by no means a singular case. The same conditions prevail wherever stock is kept, excepting where the farmers exercise judicious care. English and German papers report the same state of things, but in France, where cattle are tended with extreme care, they rarely suffer in this way. It is our neglect of this needed attention that is the cause of the frequent sickness and loss of cattle and swine, and sheep, and above all, the rough manner of herding these animals in the West, to which the most of the losses are due. Perhaps in this case it cannot be helped at present, and is only an incident in the transition state of things which exists between the old system of open-air herding, and the inevitably necessary method—to come in time—of a more humane and skilful manner of feeding.

But farmers have no excuse of this kind. Their system is reduced to rule, which should be a constant, careful supervision over their stock in regard to proper shelter as well as scientific feeding. Wastes cannot be afforded now; every resource must be husbanded; the greatest economy must prevail, and the very best methods of feeding must be practised. There is no good reason why any animal should suffer from any of the disorders above mentioned, every one of which is entirely preventable. If it is so in a hundred cases it is so in a thousand, and there could be easily mentioned a hundred farmers who have never had a case of these diseases in their herds and flocks, while others around them always have more or less of them every year.

Thousands of tons of linseed oil cake meal are exported to foreign countries every week. We ought not to export a single ton, nor any of our cottonseed meal. These should be used at home in feeding. They are the cheapest feed that can be procured, and there is a place for every pound of them. Linseed cake meal is a specific against these diseases, just as truly as food is a specific against hunger. It affords precisely the kind of nutriment of which the hard, coarse herbage is deficient, and aids the digestion of it. It keeps the bowels in good order, and helps to relieve them and the kidneys of the too great strain of getting rid of matter that cannot be assimilated and so poisons the blood, and produces all these prevalent disorders. A pint of it daily, for young and small animals, and a quart for larger ones, will have the most beneficial effect.

Animals do not require medicine or doctors, if the feed and care are right. Doctors and physic are only required to undo our mistakes or repair our defects. This may be taken as one of the farmer's axioms, it is so true and so evident to the careful and thoughtful man. And in keeping stock there are more mistakes and deficiencies made in feeding than in any other part of our farm work.—*N. Y. Times.*

Feeding Swine.

The yearly slaughter of hogs in the United States is about 52,000,000, producing 4,000,000,000 pounds of meat, of which, about 1,000,000,000 pounds are sent abroad. It will be seen that the production of pork is enormous for even such a country as ours, and that between the use of the very best methods and these only fairly good, there may be a difference of millions of dollars.

A glance at the receipts noted in the market reports, shows that the greater part of the hogs are marketed in the season from November to March, inclusive. This is because it is most convenient and profitable for the farmer to fatten, and for the packer to dispose of, the hogs at this time. And while summer packing is making rapid strides, so many more hogs are fattened in the fall and early winter, that I shall consider my subject only as it is applicable to this time.

Let a person start at the east and traverse our country at this season, and, unless he has been accustomed to it by long observation, he will wonder at the great waste everywhere apparent in the fattening pens, and he will find this waste increasing as he goes westward. We have what are known as "the fall rains," which, though not heavy, fall so slowly and find the ground in such condition that they make a great mud. Yet, not one farmer in ten has a feeding floor of any kind. The food is thrown to the hogs in the mud, increased by the manure of the hogs and their rooting for stray grains. By such a course of feeding much food must be lost. After the hogs have been fed all they will eat (the common practice in fattening) for a couple of weeks, they become so sated that they will not hunt for the food in the mud and manure, and it is lost. I have seen hogs fed many a time when fully half of their food was lost. Not only is food lost, but the eating of the hogs under such circumstances is sure to impair their health and occasion further loss.

The easiest way to make profitable pork is to stop this waste. A good feeding floor is made by laying boards on a level, smooth patch of ground. No foundation of any sort is used. This is apparently slovenly, but the boards soon become fixed, and they do not rot faster than when laid on cross pieces. When the hogs are disposed of, pull up the boards and stack them up against the fence until the first rain has washed them clean, when they can be put away in the dry or used for any purpose desired. Such

a floor can be laid quickly, and the boards are at your disposal as soon as the hogs are marketed.

Some say that it is better to put the boards over the hogs than under them, and in some cases I am sure it is. The ground under a shed will soon become so hard and smooth that no grain will be lost, and it can be kept clean as easily as a board floor, while the hogs have the advantage of a shelter from rain and snow while eating; and rain and snow make the floor of board more or less nasty. Often old sheds can be utilized for this purpose; and a shed of straw or any other substance that will shed rain and snow is just as good as boards, and often much less expensive. The gain would pay for the shed ten times over.

The profits may be further increased by saving the manure. It is estimated that as hogs are generally fed by farmers while fattening, one bushel, or fifty-six pounds of corn, makes ten pounds of pork. From my experience and observation I know that this is a liberal allowance of pork, take the country over. As the animal takes only ten pounds of matter away in its body, it must void forty-six pounds for every bushel of corn consumed. If the farmer will make a little calculation on this basis, he will be surprised, I am sure, at the amount of manure he can save if he will. In the case of hogs, a little more than half of the manure by weight is liquid; and in nine cases out of ten this is wasted *in toto*.

Fortunately, hogs always have a particular place in which to deposit their voidings. Advantage can be taken of this. If they are confined in a pen with a tight floor (and the floor should be tight), the liquid manure can easily be drained into the compost heap, for it will be deposited, like the solid excrement, in one corner. When the hogs are confined in a lot, as is generally the case in the great pork producing states, as soon as they have selected the spot for their droppings it can be littered with straw, which will absorb most of the urine. But little straw should be used, and it should be changed every morning. If sawdust can be procured, it is all the better. In this way the solid and liquid voidings can be removed to the compost heap together. If the hogs are provided with comfortable, sheltered sleeping quarters, they will not lie on the straw or sawdust, which would prove injurious.

I am clearly convinced that hogs are best fattened on a clover field, no matter how late it is in the fall or even in the early winter. As long as the weather is pleasant they can be fed in a new place each day; the feeding ground will not become foul, and all the manure, solid and liquid, will be left upon the field. There must be sheltered sleeping quarters in one corner of the field; and a shed of straw or something else, to feed under in bad weather.

A correspondent of a western agricultural journal lately attempted to prove that corn was an unhealthy food and, *per se*, the enemy of the farmer. While he did not prove this, he succeeded in establishing the fact, that as corn is commonly fed in the great corn-producing States, it is productive of much disease. This is not the fault of the corn, but the way it is fed. There is no better food for fattening swine than corn; but that is no reason why it should be fed exclusively. The health of animals demands a variety of food; and failure to comply with this demand will produce disease just as surely in the case of swine, as of human beings.

Feed corn, but also other food. Let corn be the principal ingredient of the ration, but not the only one. Turnips are a good substitute for corn, and are better yet used, when fed in connection with corn and other grains. I have known splendid droves of hogs to be fattened on boiled turnips and corn meal. The turnips must be boiled to

be of much value; hogs will not eat enough of them raw to become fat on them. If a couple of large iron kettles are placed near the feeding troughs (for the boiled turnips must be fed from troughs) the trouble of cooking will be little. Either bran, sheep-stuff, or oats may be mixed with the turnips in place of the corn meal.

Although there is not much nutriment or fat forming substance in pumpkins, it will pay handsomely to grow them to mix with the food of fattening hogs. Corn, especially if old, has an astringent tendency, and hogs fed largely upon it are apt to become constive. Pumpkins are gently laxative, and will correct the astringent properties of the corn. They are best fed raw.

I need hardly remind the reader that the best way of all to economize food and to make it profitable is to provide shelter from cold and wet weather.—*Our Farm and Garden.*

Scours in Calves.

Every spring there is a good deal of complaint about scour in calves, and information is called for to know how to treat the affection. The past treatment consists in removing the cause, or causes that produced it, the chief of which is indigestion. Calves which run with their dams, or which are fed with new and warm milk, are seldom if ever troubled with scouring. It is when they are fed upon skim milk—sour or sweet—or whey, or other food not natural to the young bovine—food good enough, perhaps, in quality, but given too cold—that this complaint mostly occurs.

The stomach of no young animals will endure much chilling without creating serious disturbance, nor is chilling good for the stomachs of older ones. The stomachs of your ruminants are not only not as well fortified against the effects of cold foods as adults of that class, they are not even as well prepared to bear up against chilling as the stomachs of non-ruminants. In adult ruminants, the paunch, or rumen—the first and largest division of their huge compound stomachs—receives nearly all the cold foods and drinks taken in by them. After being warmed up in this department and softened and remasticated, its contents go to the other division, which, always receiving them warm, never become accustomed to taking in cold materials. This is especially true with respect to the fourth division, or true stomach, it being necessary for the food to pass through all the others before reaching it, as it is in the last division in the series. In the young ruminant, this fourth or last division is the only active part of its stomach. The other divisions, especially the paunch, exist in a somewhat rudimentary condition, and are, at first, inferior in size, and useless, and only come into activity by slowly developing as life advances.

Cold food given to a young ruminant must, therefore, go where cold food was never intended to go—into a receptacle designed by nature for the reception of warm material only. To force them to take cold food before the other divisions are developed enough to at least share in the labor of warming it up, is to war against nature, which always demands a penalty for the infraction of her regulations, and the young ruminant pays it. With the non-ruminant it is a little different. They take all their food into their single receptacle at the temperature of the air, and consequently become inured to low temperature, and their young inherit something of the natural hardness acquired by habits of their ancestors. Not so with the young ruminant. On the contrary, it inherits, in the only part of the stomach it first utilizes, conditions only adapted to warm food, and it is therefore doing greater violence to its nature to compel it to take its food cold, than to do so with a non-rumi-

nant, although it is not good for the latter. Those who thoughtlessly follow the practice of giving calves in their nursing age only cold liquids, invariably weaken their stomachs and impair the digestion of their food; and one of the consequences of the indigestion thus induced is scour. When, by the use of grass, or hay, or other solid food, the paunch and other divisions of the stomach begin to develop and to share in the reception of food, the temperature of its rations may, with safety, begin to be very gradually reduced, but never before.

Other ill effects often follow from the use of too much cold food in old as well as young animals. Food must be warm to digest well. Digestion goes on best at blood heat, and in most warm-blooded animals it stops entirely if the temperature falls much below it. Fermentation will go on at a much lower degree than digestion, and when digestion stops, by reason of chilling or, indeed, of any other cause, fermentation immediately begins. Excessive rations, as well as cold ones, also contribute to active fermentation, and when both cold and excess are combined, the effect becomes greatly aggravated.—*Selected.*

The Dairy.

A Wonderful Butter Yield.

It would seem that it is impossible to mark the limit of the production of butter in tests rigidly applied. The last and most extraordinary performance is that of Mary Anne of St. Lambert. We give the full official report of the committee in charge of the trial. The result is 86 lbs. 12 $\frac{1}{2}$ oz. of salted, marketable butter in one week.

Official Test of Mary Anne of St. Lambert 9770.

36 LBS. 13 $\frac{1}{4}$ OZ. OF MARKETABLE BUTTER IN 7 DAYS.

JOHN L. HOLLY, Esq., President A. J. U. C.:

Having been appointed by you as a committee to witness the test of the Jersey cow Mary Anne of St. Lambert 9770, owned by Mr. Fuller, of Oaklands Farm, Hamilton, Ont., we beg to report as follows: The test began September 23d, by Walter Rutherford seeing that at 6.30 a. m. of that day the cow was milked dry. The first milking for the test was made at 6.30 p. m. of the same day in the presence of Walter Rutherford, and the cow was milked at 6.30 a. m., and 6.30 p. m. each day up to and including the morning of the 30th ult. The cow was, at the dates and times named, milked in the presence of Walter Rutherford each time, and in the presence of Thomas Stock on the following dates: The evening of the 24th, both milkings of the 25th, both milkings of the 26th, both milkings of the 27th, and both milkings of the 29th. The milk produced by the cow at each milking, namely fourteen, was, from the moment it left the cow's udder until securely locked in a Cooley creamer, under the personal supervision of each of the committee when present and always under the personal supervision and within the sight of Walter Rutherford (I, Walter Rutherford, always following close to the pail when taken from the stable to the Cooley creamer) until securely locked in a Cooley creamer, which was fastened with a tape passed around the creamer and through the hasp of a padlock, sealed with a private seal, and locked by Walter Rutherford with new padlocks purchased by the committee for this test.

The milk remained in the creamer for thirty-six hours, and the whole milk was then removed and put in another creamer, which was locked and sealed in the same way as the Cooley creamer in the presence of both of the committee when both were present, but always in the presence of and by Walter Rutherford. The seal used for this creamer was the same private seal, and the padlock was a new one, purchased by the committee for this express purpose. Before

any fresh milk was put into the creamer or before any whole milk was removed from it Walter Rutherford always examined the seals and found them perfect and untampered with. The same care was taken to see that the seals of the creamer in which the whole milk was left to ripen had been untampered with, and we found the seals throughout the test perfect. The milk or cream was never

weighed by us after salting and working; the first producing 17 lbs. 7 $\frac{1}{2}$ oz., and the last 19 lbs. 4 $\frac{1}{2}$ oz., making a total of 36 lbs. 12 $\frac{1}{2}$ oz. of good, marketable butter. The butter was of very high color and very good texture. Herewith we send you some of the butter for analysis, and would request you to be good enough to have it analyzed. Mary Anne of St. Lambert 9770 was dropped March 26, 1879; dropped her last calf July 23, 1884. She was served for the first time once only, as we are informed, on Aug. 25, 1884, and as she has never been in season since, it is assumed she is in calf.

The cow was fed by the manager at his discretion, and he informs us that at the beginning of the test she was eating thirty-five imperial quarts of feed per day, consisting of the following: Twenty quarts ground oats, ten quarts pea-meal, three quarts ground oil-cake, two quarts wheat bran, and this was increased up to about fifty quarts per day, the composition of the above food being varied. She was also fed a small quantity of roots and cabbages and a few apples. When we saw her fed she always appeared (excepting once) greedy for her food. This was divided up into from five to seven feeds. The cow was kept with Ida of St. Lambert in a small pasture of withered clover—very poor feed—with no undergrass at all, and which could not produce a flow of milk, but the whole feed was given to enrich it.

Mary Anne is long-bodied, with a wedge-shaped, wide-spread barrel; and exceedingly deep through the chest, weighing 1,050 lbs. She is very clean-limbed, very fine head with horns turning in, a little long in the face, rather straight, very well sprung open ribs; she is very long from the hip to the rump; she has a very large belly escutcheon; good milk veins, very large and tortuous, and many udder veins.

We were informed that ever since she got over her calving the cow has been fed rich food with the intention of producing rich milk rather than a flow, and keeping in mind the test that was before her, and if their statements are correct she really has been fed for this test for nearly two months, and certainly the color and density of her milk bears out its great richness in butter fat. The scale by which the butter was weighed on each occasion was tested by your committee with a pound weight bearing the government stamp as being a proper pound weight of sixteen ounces to the pound. We send you the accompanying statement, giving you the details of each stage in the test.

WALTER RUTHERFORD,
THOMAS STOCK.

The Private Dairy.

If the making of butter was simply a matter of setting the milk, collecting the cream and using the churn, there would be no difficulty in making good butter on every farm, but the truth is the making of butter depends upon the temperature, manner of setting the milk, food of the cow, her health, her character as a producer, quality of the milk, and mode of churning. It is the many qualifications necessary that makes the matter so important. In a paper read before the Iowa Butter and Cheese Association this matter was very freely discussed, and the matter of cleanliness was considered the first desideratum in the private dairy. In relation to setting the milk, there are two methods—the deep and the shallow. With both there is the rapid and the slow cooling—cream rises principally while the temperature of the milk is falling, and but slowly while it remains at a fixed temperature. Rapid coolings will raise the cream in the shortest time, but slow cooling gives a denser cream, containing less cheesy matter. Quick cooling gives a thinner, frothy cream, full of cheesy matter, requiring a greater bulk to make a pound of butter than that obtained by the slower method, while the

Temperature during 9 hr.	Times of Milking.	Weight of milk.	Amount of butter & fat ready for market.	
			Churned together September 26th.	Churned together October 2d.
55 deg.	September 23d, 6.30 p. m.	16 lbs. 8oz.	17 lbs. 7 $\frac{1}{2}$ oz.	10 lbs. 4 $\frac{1}{2}$ oz.
71	September 24th, 6.30 a. m.	17	18	18
60	September 25th, 6.30 a. m.	18	18	18
57	September 26th, 6.30 a. m.	18	18	18
70	September 27th, 6.30 a. m.	18	18	18
68	September 28th, 6.30 a. m.	18	18	18
67	September 29th, 6.30 a. m.	18	18	18
65	September 30th, 6.30 a. m.	18	18	18
		35 lbs. 8 $\frac{1}{2}$ oz.	36 lbs. 12 $\frac{1}{2}$ oz.	35 lbs. 0 oz.
		Total in seven days.		

disturbed except in the presence of both of us when both were present (and always in the presence of Walter Rutherford), and until after the seals and locks had been removed by Walter Rutherford.

On the evening of the 28th, after the night's milking had been brought over from the stable, in my presence, it was poured into the creamer between me and the lamp we were using, and to me the whole milk, when hot and fresh from the cow, had the appearance of cream.

Two churning of the whole milk were made, each churning being of seven milkings. Before each churning the seals of the creamer in which it was put to ripen were examined and broken by Walter Rutherford; the padlocks were opened, in presence of both of the committee, by Walter Rutherford; the whole milk was placed in the churn in the presence of both of the committee at each churning, and both of the committee were present throughout the entire churning. From the time that the milk went into the churn until the butter was gathered of the first churning the time was one hour and a quarter, and it produced 17 lbs. 1 $\frac{1}{2}$ oz. unsalted, well-worked butter. For the second churning the whole milk was removed in the same way in the presence of both of us, and put in the churn in the same way in the presence of both of us, and both of us were present throughout the whole churning, which took one hour and five minutes, producing 18 lbs. 7 $\frac{1}{2}$ oz. of well-worked, unsalted butter; the total unsalted butter in seven days being 35 lbs. 8 $\frac{1}{2}$ oz. At each churning salt was added at the rate of one ounce to the pound in our presence, when the butter was reworked in our presence by the dairywoman, which we do not think was thoroughly worked, but was worked as much as the dairywoman believed the butter required for her mode of making. Each churn-

product will be inferior in quality. Usually shallow setting and slow cooling and deep setting and rapid cooling go together. When the same temperature, deep setting will require a longer time to obtain all the cream than shallow, and one strong claim for shallow setting is that in order to the development of the genuine butter flavor the cream must be exposed to the atmosphere for oxygenation. Without such exposure, butter made from it is flat and insipid. With shallow setting, fine flavored butter can be made from perfectly sweet cream, while cream from deep setting must be exposed till it sours before churning and will still lack the fine flavor of that from the shallow setting, where the cream absorbed oxygen from the atmosphere during the whole time it was rising.

A lower temperature than 50° would injure the keeping quality of the butter if it did not hurt the flavor, though some good butter makers run the temperature much lower. It is a fallacy to think all the cream cannot be obtained except at low temperature, and to make the finest flavored and longest keeping butter the cream must undergo a ripening process by exposure to the oxygen of the air while it is sweet. This is best done while it is rising. The ripening is very tardy when the temperature is low. After cream becomes sour the more ripening the more it depreciates. The sooner then skimmed and churned the better; but it should not be skimmed and churned too new. The best time for skimming and churning is just before acidity becomes apparent. Cream makes better butter to rise in cold air than to rise in cold water, but it will rise sooner in cold water and the milk will keep sweet longer. The deeper milk is set, the less air the cream gets in rising. The depth of setting should vary with the temperature. The lower it is the deeper milk may be set. The higher, the shallower it should be. Milk should never be set shallow in a low temperature nor deep in a high one. While milk is setting for cream to rise, the purity of the cream and quality of the butter will be injured if the surface of the cream is exposed freely to air much warmer than the cream. When cream is colder than the surrounding air, it takes up moisture and impurities from the air. When the air is colder than the cream, it takes up moisture and whatever escapes from the cream. In one case the cream purifies the air; in the other the air helps to purify the cream.

Washing the butter in the granular form is a great improvement over other methods. By washing in the churn before the butter is gathered, nearly all working is obviated. Water should be poured into the churn, agitated and drawn off until the water is clear, after which the butter can be salted, pressed together and packed for market. Much working, and especially a second working, is injurious, destroying, as it does, the natural grain of the butter, giving it a greasy, salty consistency. The aim in packing is to exclude air and light. Covering with brine is the only sure method of excluding air. Store in a sweet, cool place, where an even temperature can be maintained somewhat below 60°.—*Field, Farm and Fireside.*

Butter Making.

My locality, though perhaps as well suited as any in the country for dairying, is still unprovided with any other appliances for butter making than such as have been in use for the last hundred years. Creameries are still in the distant future, and butter-workers are unknown, except through the advertising pages of the newspapers. The old up-and-down dash churn still holds its sway, as do the long rows of broad tin milk-pans in the house cellar, and the same old bowl and ladle that our grandmothers used—not the

same old articles, of course, for they do get broken sometimes, but others exactly like them. But we make good butter, as good as the best gilt-edged in New York market; and as, no doubt, many *Rural* readers are in similar circumstances as ourselves, I will try to show how this may be done.

To make good butter requires pure air, proper temperature of milk, and the most perfect cleanliness, from the time the milk is drawn from the cow, till the completed article is ready for the consumer. It also requires the exercise of observation and common sense to know exactly when to skim, when to churn, how much working it requires, how much salt to put in, and how to pack. Particular attention must be paid to the cellar or dairy in which the milk is kept; for as milk readily absorbs volatile matters, it is of the first importance that the air of the milk room be kept pure and untainted. The room should be of a temperature of about 50° to 55°, moderately light, easily kept clean, and well ventilated. A well drained, dry, porous, earthen floor is best for maintaining a pure atmosphere, as fresh earth is an excellent absorbent. If it can be accomplished, the best way is to have a "spring house," as there is no better way of preserving the equal temperature necessary for the dairy, than the use of a permanent spring of water. The temperature of a spring is, as nearly as possible, that at which cream rises most rapidly and completely. The odor of milk fresh from the cow is disagreeable, and if not dispelled remains in the butter, injuring its flavor and keeping qualities; water flowing through a milk room will absorb this odor, besides keeping the air moist, so that the cream does not become dry and leathery, as in dry, airy milk-rooms.

The skimming should be done when the cream has all risen, and before the milk has thickened; the exact time will depend on the temperature; a little experience will enable one to tell. At the proper time the cream will be of a rich, bright yellow color, and of such a consistency that it can be removed almost entirely from the pan without breaking; if allowed to stand too long, both the quantity and quality will be seriously affected; it will not churn as easily, nor make such good butter, nor will the butter keep as well. Yet in order to make the largest quantity of butter, care must be taken not to skim too soon, for then all the cream will not have risen, so that there would be considerable loss. The milk should all be skimmed when set the same length of time, which requires that some be skimmed every night, and some every morning. The cream should be well stirred as each skimming is added to it.

The churning should be done as soon as the cream is slightly soured, but before it has begun to ferment in the least; it should be brought to a temperature of about 60 degrees; a little more if the churning is done in a cold place, and a little less if in a warm one. The churn must be thoroughly scalded and cooled before using; and the cream be carefully strained into it; the churning should be kept up, without the least cessation, until the butter has come, which ought to be in about 35 or 40 minutes. It should not be churned too long; only until the grains are about the size of plump wheat. It should then be removed from the buttermilk, and well washed in plenty of pure, cold water, or, better still, cold brine. Butter properly churned requires very little working; washing is much better, as there is no danger of either water or brine injuring the grain or flavor. After the milk has been thoroughly washed from the butter, salt should be lightly worked in—about eight ounces of salt to ten pounds of butter—then cover and set away for about 24 hours, or until the salt has all dissolved. It should then be worked over enough to extract all

cheesy matter, which would spoil its keeping qualities, but not enough to break the grain, which would make it look greasy, and completely spoils its flavor; when worked just enough, it will look as if it had beads of dew standing all over its surface.

It is now ready to be put into packages to suit its market. Here, where the most of our produce is consumed in the adjoining towns and villages, pound rolls and prints meet with favor, as being convenient for retailing to customers who only want a pound or two at a time. Some, however, prefer it in small crocks, as being easier to keep in good condition, and more suitable for those who wish to lay in a larger supply. For shipping, tubs or firkins would be required. Those holding 50 pounds are a good size for an ordinary dairy; and are convenient for handling. They should be made of white oak, ash, or maple; and they are prepared for the butter by being filled with boiling-hot brine, allowing it to stand in them until perfectly cold. Then pack the butter firmly and closely to within an inch of the top; cover with a thin muslin cloth, and fill up with salt; head up closely so that not a particle of air can reach the butter, and ship immediately, as age never improves butter in the least. That made and packed in this manner, would always find a ready sale, and command a high price in any of the large city markets where there is an unlimited demand for good butter, and this would compare favorably with the best creamery made.

—*Cor. Rural New Yorker.*

Poultry Yard.

How to Feed Poultry.

In an article on this subject, the *Gardener's Magazine* says: It is a very easy matter to incur a serious loss annually where a good number of fowls are kept, by injudicious feeding. All kinds should have a sufficiency of food without being over-fed. If the birds are kept in a state of semi-starvation the hens lay but few eggs, and those intended for killing become so attenuated that a very considerable outlay is necessary before they can be brought into proper condition for the table, and when there they lack tenderness and delicacy. To feed too liberally is wasteful, and in the case of laying hens decidedly objectionable; for a hen, when it becomes very fat, ceases to lay freely, and is subject to various ailments, and an over-fed cock becomes lazy and subject to death from apoplexy. Full-grown fowls should have just as much as they will readily eat and no more. Barley, either whole or in the ground state, is fairly economical, used either alone or in combination with other food. Oats and oatmeal are of

especial value for fattening for the table. Indian corn or maize is, perhaps, one of the most economical foods for poultry, and has the advantage that, owing to the size of the corn, sparrows are unable to rob the fowls. Pieces of bread and vegetables of all kinds may be utilized, and scraps of meat chopped up rather small are of great value in feeding fowls shut up in the small yards where they are unable to obtain worms and insects. Potatoes well boiled and mixed with sufficient coarse pollard or bran, when scalded to form a rather stiff paste, are useful for helping out the corn. As a rule, fowls kept entirely in enclosed yards should have three meals a day; the first to consist of soft food, prepared by the admixture of boiled potatoes, kitchen scraps, bran or pollard, and barley or oatmeal; and for the other two meals corn of some kind is decidedly preferable. The soft food will be all the better if it is mixed over night and placed in an oven, so that it may be warm in the morning. The preparation of soft food is undoubtedly troublesome, and those who have but little time should feed entirely with Indian corn. A constant supply of

fresh, clean water is essential, and a moderate quantity of green food, such as cauliflower, cabbage, lettuce, broccoli leaves, and turnip tops, should be thrown into the yard daily, otherwise it will be difficult to keep the occupants in a thoroughly healthy condition.

Poultry Diseases and their Various Remedies.

A writer in the *Chicago Poultry Keeper* discusses certain complaints and difficulties as follows:

Roup.—Whenever you have a northeast storm with damp, chilly, disagreeable weather, look out for the roup. Roup is to the fowls what heavy colds are to human individuals, and as we may have cold in the head, cold on the bowels, sore throat and other disturbances from cold, the term 'roup' covers them all. Roup in some forms is contagious, while in other shapes it may exist in a flock without affecting any but weak constitutions. The first thing to do with the affected fowl is to clean out the nostrils, and every breeder should have on hand a small syringe which should be put to use early. Roup, when malignant, makes known its presence by a peculiar disagreeable odor. The sick fowl looks droopy, and a slight pressure on the nostrils causes a discharge which is very offensive in smell. Make a solution of copperas water, and with the syringe inject some of it into the nostrils, and also down the throat. If the bird is no better in a few hours, try a severer remedy, which is the injection of a mixture of coal oil and carbolic acid. Add ten drops of carbolic acid to a table spoonful of coal oil, and force a small quantity into each nostril. This will cure when all other remedies fail. Night and morning give roup pills (or powder) either in the food or by forcing it down the throat. Add some also to the food of those that are well.

How to make roup pills is what most persons desire to know. The basis of all roup pills or powders is asafoetida. This is combined with tonics and cathartics. Here is the method, and by which a small quantity may be made at a small cost. Take one teaspoonful each of tincture of iron, red pepper, ginger, saffron, chloride of potash, salt and powdered rhubarb; mix them intimately. After thorough mixing add three tablespoonfuls of hyposulphite of soda and mix together well. Incorporate this with one ounce of asafoetida, working it together until the whole is completely mingled, occasionally softening it when necessary, with castor oil. This can be made into pills or when dry into a powder. It is of the same composition as many of the roup pills which are sold at 50 cents a box.

CONDITION POWDERS.—There are many suggestions for making hens lay, but their virtues depend upon stimulating the fowls and supplying them with materials for producing eggs. Here is a recipe, which is a good one (much better than the majority,) the cost of the ingredients of which is but very little. Take of bone meal, ground meat and parched wheat (ground,) two pounds each; linseed meal, common salt, ground oyster shells and charcoal, one pound each; sulphur, copperas, common bread soda and fenugreek, half pound each; saffron, red pepper, ginger and hyposulphite of soda, one quarter pound each. Have all the ingredients in a fine condition, mix them together thoroughly, and you will have about thirteen pounds of condition powder, at a cost of less than 5 cents per pound, and which is not only good egg food, but a preventive and cure for many diseases. Give a heaping tablespoonful once a day to every ten fowls, in the soft food.

Lice.—This is not a disease, but is not out of place here. To be rid of them provide a dust bath, dust the fowls with Persian insect powder, clean out the poultry houses

and coops, rub the roosts with coal oil, and whitewash the buildings inside and out with hot whitewash to which carbolic acid has been added.

SOURVY LEGS.—Rub the legs two or three times (once a week) with lard and sulphur, to which a few drops of carbolic acid have been added, or with mixture of lard and coal oil; but do not grease sitting hens in any manner, as it injures the eggs.

TONIC FOR FOWLS.—Iron in any shape is beneficial to fowls. Copperas is sulphate of iron, and if a little copperas is added to the drinking water, or ground fine or mixed with their food, the benefit will soon be seen in the reddened combs and healthy look. If an old iron pot is used in which to keep the drinking water, the gradual oxidization of the iron by the water will cause particles of oxide of iron to be given off, which will be taken up by the fowls when drinking. A handful of nails or old pieces of refuse iron, iron filings, or even iron cinder, if placed in the vessel containing the water, will more or less afford iron to the poultry. Iron is invigorating, stimulating, and assists in guarding the system from disease. Iron is in the blood of every living creature, and any deficiency thereof causes weakness or debility. The use of copperas is beneficial in another respect. It is a remedy for a great many diseases, is a good disinfectant, and a sure remedy against contagions of a certain character. Do not be afraid to use it. A tablespoonful of solution of copperas in the drinking water for a dozen fowls is sufficient, and it is cheap in price, the expense of its use is but a trifle.

MOULTING.—Moultling is simply shedding old feathers. Feed liberally, giving both the egg food and tonic. Warmth is the best remedy for diseases especially roup. Pip, or a thickening of the membrane of the tongue near the tip impedes breathing and sometimes suffocates, especially chicks. Clip off the end with a pair of scissors, if an extreme case, and give the bird a good mouthful of butter or lard, to which a few drops of coal oil are added. Bowel diseases other than cholera may be treated in this manner: Use castor oil for constipation, and castor oil with a drop or two of laudanum for diarrhoea. Always give clean water, free from filth.

How to Cure Egg Eating.

Sometimes the habit is formed by the carelessness of the kitchen maid, or housekeeper, in throwing the egg shells into the pail and giving them with the other waste to the hens. This should never be done, if you want the hens to respect their own eggs. Understanding the cause of this unthrifty habit, it is not very difficult to provide a remedy. From a recent experience, we have found that the habit is very much broken by an abundant supply of crushed shells. It had grown so bad in a flock of twenty Light Brahmans, owing to neglect of this ration, that they devoured every egg without the closest watching, at the cackle of every laying hen. Giving the shells every morning, the craving ceased, and we found the eggs remaining in the nests undisturbed. As an assistant to this remedy, we manufactured an egg trap from a common nest box. This is so simple that any one accustomed to the use of tools can make it in an hour or two. A slight inclination of the board upon which the nest egg is fastened will cause the new laid egg to roll away from under the hen, beyond her reach, as soon as it is dropped. The rear board has the same inclination toward the center, and projects over the other board far enough to protect the egg when it has rolled away. The space between the boards is just wide enough to give free passage to the eggs. The egg box may be lined with a handful of sawdust or chaff, to protect the shells from cracking. If

the back board be furnished with hinges, it can be used as a lid, to allow of the removal of the eggs. It is a complete egg trap, and with the oyster shells, in our case, abated the nuisance of egg eating. Many think that when a hen has contracted the habit of egg eating, the shortest way is the best, and instead of eating, she is put into a condition to be eaten. But a good layer is too valuable to be given up without an effort to reform her bad habit, often acquired through the negligence of the owner. The egg trap works admirably, and secures the end desired by placing it out of the power of the hen to do mischief.—*American Agriculturist.*

Horticulture.

Eastern Shore Notes on some of the Newer Grapes.

As I made no MSS, notes during the grape season, it is perhaps the safer plan not to confide too much to memory alone, as there are continually presenting themselves to the minds of even *practical* fruit growers, new and interesting topics for thought and investigation, and very often an important feature may be lost sight of in the way of description if delayed too long. With this impression, I now begin the fulfilment of a promise made to THE AMERICAN FARMER some time back, and will first notice the newer white varieties as tested here during the past two seasons.

POCKLINGTON.—Bunch, small to medium in size, berries large, ripened after Concord, which in foliage and growth of vine it much resembles; the quality of the fruit with me is about third rate, not as sweet as Martha and quite as foxy, with a thicker skin. Altogether there is much room for improvement, and I trust, for the sake of those who so spiritedly disseminated it, that it will prove better elsewhere.

DUCHESS.—What few small berries this variety ripened on the unsightly clusters, were of fair quality; but whether from imperfect pollen, or other inexplicable cause, I cannot write, yet clusters naturally formed so far as the frame-work goes, would have only here and there a grape, in no case exceeding a dozen; and these seemed to ripen about as well outside of bags as in. Unless age shall greatly change the behavior of this variety, it is entirely valueless here. The vine is a strong grower, yet notwithstanding this fact, I have never seen a variety more inclined to mildew in propagating it from cuttings.

EL DORADO.—While the quality of this is very good, its behavior is quite like the preceding, only worse if possible; berries about same size (a little larger than Delawares); season with, or a trifle in advance of, Concord; vine a good grower, but all in all is not the grape for the million.

PRENTISS.—Vine a moderate grower, clusters full medium size, berries medium or about the size of Diana, quality very good, shows no inclination to amber tint in color of skin when fully ripe, hangs well, and is in all respects a most excellent and desirable variety. Ripened this season with me about the same time as the Delaware.

LADY WASHINGTON.—Vine a good grower; clusters very large and perfect; berries medium size; skin greenish, taking on considerable of the amber or pinkish tint when fully matured; quality excellent with me. This is decidedly the best of any white varieties that I have yet tested. I dare not stop to write all the good about it, that it richly deserves; suffice it to say that it stands at the 'head of the class' here.

TRIUMPH (CAMPBELL'S).—This variety I was anxious to get because of its reported lateness of ripening, and though it was not "blown" so strongly by way of delusive advertisements, I find it to be *all* and even more than Mr. Campbell modestly claimed for

it. How *sodom can as much* be truthfully said of new fruits! Clusters large; berries above medium to large; color, light brown; quality, *very good*; season, among the latest; vine, a very strong grower; healthy, large foliage, and with me has been difficult to propagate. The seeds are very few and strikingly small in this grape, contrasting strongly in this respect with any of the Rogers' hybrids.

JESSICA.—I fruited this very sparingly this season, and am not very favorably impressed with either fruit or vine, the latter being on the order of the Elvira. Of course it was not a reliable test so far as size and quality of fruit goes, and I shall be glad to credit it with any improvement it may show hereafter.

These are all of the newer white kinds that have fruited with me, and I will now notice next the red or amber-colored varieties, beginning with

VERGEMINE.—This variety I happen to have through the carelessness of a New Jersey nurseryman, who sold the same to me for *Early Dawn*. It succeeds fairly well here, the clusters are large, as also are the berries; quality, good; skin tolerably thick; color, a dark amber, bordering on maroon; vine, a good grower; foliage, distinct from any kind I have—in short, a very fair grape, ripening after Concord.

JEFFERSON.—Clusters large, shouldered (as is also the case to a greater or less degree with all of the above described kinds); berries above medium; skin, thick; color, same as Catawba; quality, good, but not equal to Iona. The clusters are beautifully perfect, and if the variety succeeds elsewhere, as with me, it must take high rank as a valuable market variety. I never knew any grape to hang on with greater tenacity than this; season, a little after Delaware.

EXCELSIOR.—Clusters, medium to large, sometimes shouldered; berries, medium size; skin, very light amber, as near white, with me, as either Elvira or Lady Washington; quality, best; season, after Delaware, nearly as late as Triumph; vine, a very free grower; healthy, as is also the bright green foliage; a splendid grape.

BACCHUS.—This is Ricketts' new wine grape, and with me, is so very similar to Clinton in every respect, that I fail to discover any merits in it over and above its parent. Clusters, size and color of berries, same as the Clinton.

MOORE'S EARLY.—This properly cannot be classed among the *newer* kinds, but as it is not generally planted yet, I will note its worth in comparison with others herein described. Clusters, medium and above, seldom, though sometimes, shouldered; berries, large; skin, a little heavier than that of the Concord; color and quality about the same ripe a full week before Hartford; berries adhere to the clusters, with no more persistency than do those of Concord, but on account of its early season of ripening, is quite valuable for market; vigor and foliage of the vine similar to Concord.

In conclusion, if I had room for but three grape vines, Moore's Early would be one of them, not particularly on account of its quality, but the hardiness and healthfulness of the vine, coupled with its earliness, give it a worthiness of room that but very few kinds possess; if I were planting a dozen vines to-morrow, one of Moore's Early is all I should want.

J. W. KERR.

Denton, Md., Oct. 21, 1884.

Kitchen Garden.—November.

In my last communication I made some allusion to the drought which was even then showing its effects. Another month has passed and still no rain other than mere sprinklings which never went to the root of the smallest garden plant. I sowed Lettuce after one of those showers which did not prove sufficient to start the seeds and had to be supplemented artificially. Celery can be had by persistent watering, and but in

few places can water be spared for that purpose. The rain will come too late for the Turnip crop. There is no opportunity to sow Spinach or Kale and no profitable work can be done inside the garden so long as the drought lasts.

The present extended drought recalls Dr. Livingston's troubles when he undertook to teach an African tribe how to dispense with rain doctors. He advised them to settle near some never failing river and irrigate the adjacent lands, which they did under his direction. The experiment was a success for one year and then came two years of drought during which the never failing river ran dry. The fourth year was but little better. "We dug down in the bed of the river deeper and deeper as the water receded," says the Dr., "striving to get a little to keep the fruit trees alive for better times, but in vain. Needles lying out of doors for months did not rust. I put the bulb of a thermometer three inches under the soil at mid-day, and found the mercury to stand at 132° to 134°." Finally the natives lost all patience and in the belief that Livingston had put their chief and former rain doctor under a spell they sent deputations of old counsellors entreating him to allow the chief to make just a few showers. "Only let him make rain this once and we shall all, men, women and children, come to the school and sing and pray as long as you please."

In turning over an old root pit with the plow the other day a number of last year's beets were found as firm and sound as the day they were put in, and to all appearance as likely to keep through a second winter as those now growing. Just 18 months since the seeds were sown.

A pit is something I never had under my care—it is not suitable for colder latitudes—but I can see what a cheap and efficient thing it is for wintering bedding plants that are not too tender, or half hardy plants of any kind, either for those who have one but do not wish to crowd it with plants that require rest. No mats are required, but merely well-fitting, light shutters. An important point is to keep the plants as dry as they will bear—no water being required sometimes for as much as three weeks at a time. The glass should have a good pitch southward and air should be admitted on every favorable occasion. The pit should be well drained; it should be bricked up and be provided with a stage on which to set the plants. Seven feet, I presume, is about the proper depth.

By the middle of the month all garden crops liable to suffer from severe frost should be rendered safe. Plowing should be continued up to the last moment wherever there is unoccupied land. We cannot stir the soil too much or too frequently at this season. Not a year should be allowed to pass without making fresh plantings of one or more kinds of small fruits. If the planting is to be done in spring, prepare the land now by deep plowing at least. The manuring may be postponed until planting time when the land should have a second plowing. But on rich garden soil most kinds of small fruits will do well for a year at least without an additional supply of manure, after which top-dressings will answer the purpose.

Rose beds should have a heavy dressing of well rotted manure. The *monthlies* will require some long litter or other protecting material thrown over them in addition to the mulch.

JOHN WATSON.

PEAR.—The variations in the relative periods of ripening of peaches in different seasons, as stated above, form an interesting subject for experimentation; but it is not only in different seasons, but in different localities in the same season, that such changes take place. In our own garden, this summer, Express was the earliest, being fit for use June 21; this was followed by Cleveland's Impr. Earliest of All, June 23; the Rural New-Yorker, June 24; and American Wonder, June 25, all planted on the same day.—*Am. Garden.*

Fertilizing Peach Orchards.

The widespread injury done to the peach trees of the United States by the disease commonly known as "peach yellows" has induced many investigators, says the *New England Farmer*, to attempt a solution of the mystery connected with it. At Houghton Farm Prof. Penhallow has been carrying on a series of experiments to learn the influence of different kinds of manure upon the growth and health of the trees, and although the experiments have not been continued beyond two or three years, yet there are strong indications that something useful in regard to manuring peach trees has been learned. Without going into details, we may say that muriate of potash and dissolved bone have been found to give excellent results. In one case, where several diseased trees were treated with different kinds of fertilizers, the only one that became healthy was the one manured with muriate of potash. Similar results have been obtained at the Massachusetts State College Farm, where Dr. Goessmann has been applying muriate of potash to peach trees. So strongly do indications point in this direction, that Mr. J. W. Clarke, who has one of the largest and best peach orchards in the State, has discarded all other fertilizers for peach trees except bone and potash.

The explanation seems in part to be that ordinary stable manures contain too much nitrogen for the healthy growth of the peach, causing too luxuriant a growth of leaf and wood, especially late in the season, and that this late, soft growth cannot endure our ordinary winter weather.

Prof. Clarke, we believe, is in doubt whether the "yellows" should be classed as a specific disease, but thinks it may be only a condition of partial starvation, caused by being restricted to an ill proportioned supply of plant food. Some of the finest peach orchards to be found anywhere are fertilized almost exclusively with unleached wood ashes.

On the general effect of nitrogenous manures upon vegetation, Messrs. Lawes and Gilbert remark in one of their reports, that "it should be called to mind that a general tendency of nitrogenous manures is to favor luxuriant and continuous growth, as distinguished from arrest and consolidation of that already formed, whilst that of mineral manures is to favor consolidation rather than luxuriance. Or, to put it in another way, a characteristic effect of nitrogenous manures is to favor the extension of foliage, and to give it a depth of color, whereas that of the mineral manures is to tend to stem formation and production of seed."

In the light of the recent experiments in feeding peach trees, as carried on at Houghton Farm, and at the Massachusetts State College, many of our old peach growers who had abandoned the business on account of the uncertainty of the crop, are making preparations for setting out new orchards. We should never recommend setting peach trees in the fall, but it is a good time now to be getting a place ready, and to find out where good healthy young trees can be procured for setting in the spring. The peach is too valuable a fruit to be neglected wherever it can be grown.

The Amber Queen Grape.

This new grape, introduced by Messrs. Ellwanger and Barry, of Rochester, N. Y., is described by the originator as follows:

"Bunch large, shouldered like the Hamburg; berry large, frequently oblong; holds persistently to the bunch; amber-colored at first, but grows darker, till it becomes a purple grape; flesh tender, rich, and seeds small; plant a strong grower with thick leaves, somewhat downy on the under side. Fruit always eatable in August, and with proper care will keep all winter."

**The New Raspberry.**

Herewith we give an engraving of this new introduction, which is being sent out by R. G. Chase & Co., who claim for it the good qualities of productiveness, earliness, hardiness, and large size, which coupled with a firmness for shipping make it a valuable acquisition. Its discoverer, Albert Hansell, of New Jersey, says, it is a chance seedling. James Hansell says he found it in a most unfavorable spot, surrounded by briars, and in every way neglected. Its vigor, size and productiveness led me to transplant it. The bush starts late in the spring, when it branches freely, giving it the form of a miniature tree. Our farm, like many in New Jersey, has quite a number of those peculiar unproductive spots or patches, where little or nothing can be grown, but the Rancocas, when placed thereon, has pushed ahead vigorously. The first season the plants have been cultivated like any other farm crop. The second year the plantations have been

plowed once, early in the spring; after that the cultivator is run through once or twice in May, and then the plants are left to care for themselves. The plant suckers freely, and so vigorous is it that it effectually smothers the quack grass that would otherwise overrun our ground. We do not head the suckers, or even trim out the old fruiting canes during the summer; but in the fall, after the rush of work is over, we go through and cut out the old canes and thin out the suckers, leaving only sufficient for the next season's fruiting. The canes left for fruiting are then headed about two and a half feet from the ground. It is the busy man's, if not the lazy man's, berry. As regards its productiveness, I have no hesitation in stating that on the same soil and with the same care, it will produce twice as many quarts per acre as the Brandywine. The bushes have never been in the least injured by the severest winter weather, and the foliage has never shown a trace of yellow, scald, or burn."

The berry is said to be large, of good quality, bright red in color, and an excellent shipper, and has never been known to winter kill.

Seasonable Hints in Vegetable Garden.

"Weeds will do no harm so late in the season," is a common saying with slipshod gardeners and farmers, and a most deceitful and mischievous doctrine it is, too. Weeds do harm to cultivated plants, at any and every stage of their growth,—the young ones, by depriving the growing crops of some of the most important elements necessary for their best development; and the full-grown ones, by ripening and scattering their seeds thousand, nay million, fold over the land. Actual count has shown that a single plant of Shepherd's Purse and Ox-eye Daisy produce nearly a hundred thousand seeds, Pigweed a million, and Purslane, alas! over two millions.

That with such a bountiful seeding-down to weeds a crop can be raised at all seems the most surprising part of it. We know very well—from a life-long experience in the garden and on the farm—that "not to let a single weed go to seed" is easier said than done; but unless one makes the attempt, he will surely never succeed. And, in order to succeed, it must be made a firm policy and fixed principle to wage a perpetual and relentless war against every weed, as much so as we would against scorpions and rattlesnakes. If carried out, there is the great satisfaction that the task becomes easier with every succeeding year.

We know of some gardens—not many, to be sure—in which the plan is carried out, and as the result of which it seems that every trace of weeds has been entirely exterminated.

Parsley is used more for ornamentation of dishes than in their preparation, although its flavor in soups, sauces, salads, and various dressings is very agreeable to most persons, especially during winter, when Lettuce and other fresh relishes are not easily obtain-

able. In the Northern States the plant is not entirely hardy, but a light covering of leaves or straw, and a few branches on top, will preserve it so as to furnish a supply for early spring. For winter use, however, the roots have to be transferred to a warmer place before hard frosts occur. When the stock is sufficient, so that not more than one or two cuttings are required, a cold frame serves the purpose very well; but planted on the benches of a moderately warm greenhouse, it grows all winter, and may be cut half a dozen times.

A neat and pretty way is to plant it in a small keg, through the sides of which a number of holes have been bored. The keg is filled with rich soil, through each hole a root is inserted, and the remaining ones planted on the top. By keeping such a keg in a light kitchen window, giving plenty of water and an occasional dose of soap suds, it will soon become entirely covered with foliage, present a bright, cheerful appearance, and furnish a never-failing supply of garnishing greens.

Asparagus may be planted at any time this month, provided the ground is well drained; otherwise it is better to defer planting till spring. Good, vigorous plants one or two years old, rich soil, and plenty of room are the main requisites for successful Asparagus growing.—*Am. Garden.*

Fall Tree Planting.

Now is the time, says the *American Cultivator*, for planting chestnuts, walnuts, butternuts, and locust seed, which fall with the leaves. Scientific writers say that nuts can be kept in cellars during the winter in dry sand or vegetable mold, but my experience is that the quicker they are put under ground after falling from the trees the better. They should be buried about three inches below the surface, and there should be such drain-

age as should prevent their rotting. It is best to sow three nuts or acorns in each hole, and then to destroy the two weakest plants should all come up. I think it also desirable, in planting oaks or nut trees, to mix with them young evergreens, in order to form a shelter. Our warm sun and cold winds harden the bark of young trees exposed to their influence, so that the ascending sap finds it difficult to expand it. In natural forests young trees are sheltered by older ones from the sun and wind. It is contrary to nature to expose them to both. Chestnuts are perhaps the most profitable forest tree that can be planted. The oak is of such slow growth that two or three generations pass away before it can be remunerative. Chestnuts, on the contrary, soon bear nuts, which are a source of profit if sold, and of great delight to the young people if they are permitted to gather them. In twenty-five or thirty years, trees are sizable for timber or for fuel. In the interior of Pennsylvania extensive tracts are devoted to the growth of chestnut timber, which is cut off at intervals of sixteen years and converted into charcoal for the use of iron works. New trees spring up from the stumpage, and, if carefully thinned out, make rapid growth. Indeed, many practical foresters advocated cutting off oaks or chestnuts at the roots when they attain the size of a hoe-handle, and they assert that the sprout which replaces them will at the end of ten years be twice as large as the original tree would have been. I have experimented on this somewhat, but with varied success. In some cases the young trees have made astonishing growth, and in others the roots have not produced any sprouts, and the experiment has resulted in total failure.

A Plea for Sweet Apples.

A correspondent of *Home and Farm* says that there has been much said of late against early and fancy sorts of apples as unprofitable. At this time, the sentiment that there are too many of this sort prevails largely, and with good reasons as I myself think, he observes. I believe with the rest that only standard sorts—the Baldwin being the standard sort—will be found useful for market purposes. So much for general principles, and consequently the plea I have to make here is not for the early sorts generally or in abundance, but for a liberal supply of sweet apples, which I believe will be found very valuable for home use—saying nothing in relation to markets nor to sweet apple sauce, but to feed the pigs on.

It is a fact conceded by all our physiologists, that the sweets—as set over against the acids which deplete the system somewhat—are fattening. On this principle, which I regard a true one, sweet apples are excellent to fatten with, even alone, and when combined with meal after being cooked comprise a food that is well nigh complete for our hogs. And it is not all theory either, or at least the theory can be verified and justified by observation and practice.

I have no doubt of the efficacy of this food as a fattener, judging from my own limited observation and experience. And I think every farmer in grafting over some of his numerous early sorts would do well—exceedingly well—to put in their places two or three kinds of sweet apples, early and late varieties so as to have a succession through the apple-bearing season.

As appropriate kinds I would mention Sweet Bough, Danvers Sweet, Talman Sweet, and the old fashioned Green Sweet. And there is on almost every farm some kind of natural sweets worthy of cultivation. Let each farmer choose for himself, but let him choose something in this line and try them for the pigs if for no other purpose. I don't know how much of a specialty is made of them through our State, but I have an idea that sweet apples are undervalued by many.

Hyacinths.

If we would be successful in the cultivation of the Hyacinth for winter blooming, in either the greenhouse or window garden, it will be necessary to commence preparations as early in October as possible, so as to give the bulbs as much time as we can to properly develop their roots before they are started into growth; for unless they are well rooted all our efforts to obtain a fine display of this favorite winter-flowering bulb will be in vain.

In order to obtain a continued succession of bloom during the winter and spring months, it is absolutely necessary to make successive plantings until the desired quantity is secured, so when the bulbs are procured, it is advisable to spread them out in a dark, cool situation, and occasionally examine them, and as soon as they begin to throw out roots they should be planted. By selecting them in this manner, a continued succession of bloom may be enjoyed from the middle of January until May, as the Hyacinth is a plant easily cultivated, and can be grown in pots or glasses.

In cultivating the Hyacinth in glasses, the single varieties are mostly used, and do well when so grown, but then a few of the double varieties do equally as well, and can be used for this purpose.

In purchasing glasses, those known as Tye's pattern are to be preferred, and those of dark color should be selected. The bulbs should be placed in the glasses as early in October as possible, first placing in the bottom of each glass a small piece of charcoal; then set the bulb in, and fill with rain water so that it will barely touch the bottom of the bulb, and then place in a dark, cold cellar (no other place will answer as well) for not less than three months; then they should be very gradually brought to the light until they are placed in the lightest situation to be had, and given as much fresh air as possible. Keep in a cool room, and the flowers will remain a long time in perfection. When the plants are growing it is advisable to turn them occasionally, and what water is lost by evaporation must be supplied.

For cultivation in pots, a light, rich loamy soil and good drainage is indispensable to success. A compost composed of two-thirds well decayed sods from an old pasture mixed with one-third well decayed cow manure, is the most suitable. In potting, use pots four or five inches in diameter and place a single bulb in each; select porous or soft baked pots, and let them be well drained; then fill up to within an inch of the top and place the bulb in the centre; then fill up, leaving the crown of the bulb uncovered. A thorough watering should be given and the pots placed outside in any situation where the water does not stand; cover with dirt to the depth of three or four inches. In this situation they can be permitted to remain until cold weather sets in, when they should be brought inside and placed in a dark, cool cellar until it is desired to bring them into bloom, when they should be very gradually introduced into light, and heat, and after growth commences given all the sunlight and fresh air possible.

After the flowers have decayed, the bulbs that have been grown in glasses should be

thrown away, while those grown in pots can be removed to the cellar again, and in the spring planted out in the flower border if it is desired to preserve them, but as good bulbs can be so easily and cheaply obtained it is almost a waste of time to attempt to do much with them.

For the benefit of those who contemplate the cultivation of the Hyacinth for the first time, I enumerate the names of a few of the most desirable for cultivation in pots and glasses:

Twelve single varieties for pots: Baron Von Tuyl, Oronates, Regulus, La Peyrouse, Grande Vainqueur, Mirandolin, Themistocles, Amy, L'Ami de Cesar, Norma, Heroine and King of Holland.

Twelve double for pots: A la Mode, Rembrandt, Blockberg, Bouquet Tendre, Alida, Catharina, Panorama, Regina Victoria, La Tour d'Auvergne, La Virginale, Anna Marie, Pyrene and Miss Kitty.

Twelve single varieties for glasses: Mimosa, Bleu Mourant, Grande Lila, Porcelain, Sceptre, Robert Steiger, Sultan's Favorite, Madam Hodgson, Norma, Mad. Talleyrand, Themistocles, Alba superbiassima and Anna Caroline.

Twelve double for glasses: Bouquet Tendre, Frederic the Great, A la Mode, La Valse, Pyrene, Virgo, Blockberg, Grand Sultan, Othello, Rudolphus, Prince Frederic and Marie Louise.—*Chas. E. Parnell, in Floral Cabinet.*

A New Way of Blanching Celery.

A. W. Harrison gave an account to the Pennsylvania Horticultural Association, of the mode of blanching celery with charcoal, which he had found better than dry earth, sand, sawdust, tan-bark or leaves. It drains perfectly; no insect or slug will harbor in it; it retains solar warmth without overheating, absorbs enriching gases, does not rust the stalks, is easily washed off, and may be used many times over. The celery being planted on level ground, wide boards are set on edge and held by upright stakes so as to form a box around the plants, and the whole space in the box and around the plants filled in with coarsely pulverized charcoal. Cinders from the smoke-stack of wood-burning locomotives are just the thing. The boards will keep longer if coated with gas tar or soaked with crude petroleum. If not high enough to reach the tops of the plants, additional ones may be added.

To Prepare Vegetable Mould Quickly.

As early as the leaves of trees can be collected, let them be brought in a considerable quantity, into a close place, and dressed up there in the form of a hot-bed. Let this be well saturated, with the drainings from the dung-heap, with suds from the wash-house, with urine from the stable and cow-house, where this latter article can be procured. Let this bed or heap be covered and lined with fresh stable dung to make it heat.

When the heating is sufficiently subsided, let the leaves be uncovered and turned over, to mix the dry and the wet well together, and if moisture be required, let them have it of the same description, repeating the process till all be reduced to fine mould. This will be ready for use in two months from the time of collecting the leaves, and to prevent any waste of the liquid recommended, a layer of maiden earth, of two feet thick, should be made the substratum, which would receive any of the valuable liquid that would otherwise run to waste.

Leaves of slow decomposition should be avoided, as those of the oak, etc., which, however, are the best for retaining heat in hot-beds and pits. The leaves of Fir should also be avoided, but those of the Sycamore, Elm, Alder, Maple, and all the soft kinds are better suited for the purpose. This compost should be kept dry, in an airy place, and ridged up, so that the rain cannot wash out the salts with which it abounds.—*Gardener's Record.*



The Apiary.

Preparing Bees for Winter.

From November 1 to the middle of December, says J. M. Hicks in *American Bee Journal*, is a good time to look after the bees, and see that they have a sufficiency of honey to last them through the winter. Perhaps in some seasons, and especially in the Eastern States, it should be attended to earlier. A good colony of bees should have at least fifteen to twenty pounds of honey stored in the combs. It is now a mooted question as to whether it is advisable for a colony to possess a very great quantity of pollen in their winter stores.

It has been asserted, and we think very justly too, by some who profess to be well versed in the science of apiculture, that pollen is the true cause of so much disease among bees during the winter months, and especially very early in the spring do we often hear of complaints about the bees having diarrhoea. As a remedy for this trouble we suggest that salt water be placed in wooden troughs and set within a few yards of the bees, and then we think there will be but little risk to run in bees keeping perfectly healthy if all other things are in proper condition, such as ventilation, good pure food, and a comfortable shed, which should always be provided for them by the bee-keeper. The shed should have an eastern front, but if it cannot be thus made, our next choice should be south front. All bee sheds should have a close-fitting back, and a well shingled roof.

If these suggestions are attended to at the right time, and prepared with as due regard to comfort for the bees as any other stock on the farm, we would have no cause for complaint. A good farmer never thinks that he has done too much for his horses, cows, sheep, and hogs by building good barns, stables, and pens in which he can have all his farm stock protected from inclement weather.

The question has often been asked, "Is it necessary to build good winter quarters for bees?" We answer that it is just as essential as it is for any other stock. It is true that we do not pay as much for a colony of bees as we do for a cow or a horse; but it is no less the duty of the husbandman to protect and care for the bees by providing the proper sheds for them, when they "board themselves," and often return a large surplus of honey.

Honey Granulation.

The complete granulation of extracted honey is the best evidence of its purity, and when mixed with even 10 per cent. of commercial glucose (the common adulterant), it retains its liquid condition under all ordinary temperatures. In the solid condition, honey is much more easily handled and transported from place to place. When desirable to re-liquify it, all that is necessary is to immerse the vessel containing it in water just below the boiling point. It is thus in a few minutes transformed from an opaque mass into the liquid honey, clear as crystal, and without in the least destroying its delicate flavor, or the rich aroma of the particular flower from which it was gathered. These facts are now known to all dealers and to most consumers of honey; so the hard-fought battle of introducing extracted honey in the granulated form to the general public is won. Of late, we have had quite a number of cases reported to us of honey candying in the comb. This renders it totally unfit, as a winter food, for the bees, and also nearly ruins it as a table luxury, as it cannot again be liquified without melting the combs and running honey and beeswax together in a confused mass.

Candied comb honey then is an unmitigated evil, and instead of allowing it to assume that state, our efforts should be directed against it. After much experience

we have established the fact that the granulation of honey is not affected by light, as has almost universally been held, but that state is produced entirely by temperature. Hence, if kept in the proper temperature it will never granulate. Different varieties vary so slightly in this respect that it may be laid down as a rule that *honey kept constantly above 75° Fahrenheit will not granulate*, but if kept much below that point it will eventually solidify. A bay window, or any situation where the sun's rays enter the room, and where an ordinary fire is kept burning during the day, we believe, will be sufficient to preserve the honey during the winter, especially if it has been well capped by the bees, for this is an evidence that the honey in the cells has been well evaporated. Where honey is not evaporated so as to weigh twelve pounds to the gallon, or nearly so, it has a tendency to sour, and this is sure to destroy its flavor and render it unfit for table use, but will make excellent vinegar by diluting with water and setting in the sun.—*A. J. King in Phila. Press.*

The Grange.

National Lecturer's Communication.

Subject for November.

Question.—Does capital invested and labor employed in agriculture pay equal interest with like amounts used in other enterprises? If not, why not?

Suggestions.—It is a fact, as a general rule, that capital invested in manufacture, merchandising, banking, railroading, insurance, speculations, etc., pays a larger profit than that invested in agricultural pursuits. So does the labor required to manage these institutions pay larger salaries than is afforded to the management of farm operations. Agriculture is the basis of support for all other interests, and all are more or less dependent upon agriculture for support and prosperity. If agriculture can furnish such support to all enterprises it certainly must be the great interest of the country. But why is it so often less prosperous than other enterprises, and why does it pay less profits on labor and capital?

It is well to consider these causes carefully, and in doing so we find that most of the difficulty rests with those engaged in agricultural pursuits. The farmers have lived so long without organization among themselves, and have had no means to unite their efforts and influence in a co-operative way for their own good, while all others have had thorough organization and have worked to advance their own interest. And by our own neglect we have lost our former equality. The Grange proposes to remove this error and again place the American farmer on an equal footing with others, and to make us better farmers, enable us to direct all farm operations to more certain and successful results by a better system of farming. How can we best improve our present system is an important question.

In Memoriam.

WHEREAS, In the dispensation of an All-wise Providence, brother William P. Bird, M. D., a charter member of South River Grange, No. 28, has been removed by death from our midst,

Resolved. That in his death this Grange has lost a valuable member, and the Order a firm supporter.

Resolved. That we tender our heartfelt sympathies to his deeply distressed and sorrowing widow.

Resolved. That these resolutions be spread upon the minutes, and a memorial page be set apart on our journal expressly for the name and memory of our deceased brother.

Resolved. That a copy of these resolutions be sent by the Master to the widow of our late brother, and also to THE AMERICAN FARMER for publication.

The American Farmer

"O FORTUNATOS NIMMUM SUA SI BONA NOVENT
"AGRICOLAS." Virg.

PUBLISHED ON THE 1ST AND 15TH OF
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Subscribers who have minerals, ores, marls, fertilizing materials, or other substances, will be advised through our pages, by competent chemists, as to their composition, uses and value, by forwarding specimens to this office, *expressage or postage prepaid*. Questions as to application of chemical science to the practical arts will also be answered.

Persons desiring information or advice on diseases or injuries of domestic animals, will receive replies from a competent veterinary surgeon, by giving a plain statement of the symptoms, etc.

At the office of THE AMERICAN FARMER are located the offices of the following organizations, of each of which its proprietor, Wm. B. Sands, is secretary:

Maryland Horticultural Society.
Maryland Dairymen's Association.
Maryland State Grange, F. of H.
Agricultural Society of Baltimore Co.

BALTIMORE, NOV. 1, 1884.

The National Agricultural Congress.

This assemblage meets on November 19th at Nashville, Tenn., to discuss subjects of general interest to the farming population and to take action looking towards more united action by agriculturists in matters of general concern. Col. Robert Beverly, of Virginia, is president, and Henry C. Hallowell, of Montgomery county, is vice-president for Maryland. The following have been appointed delegates from this State and have been unofficially commissioned by the Governor: Henry M. Murray, of Anne Arundel; Louis McMurray, of Frederick; F. Carroll Goldsborough, of Talbot; Walter S. Franklin, C. Lyon Rogers and Wm. B. Sands, of Baltimore.

Maryland State Grange.

The annual session will be held in Baltimore, in the hall of the Young Men's Christian Association, beginning on Tuesday, December 9th, at 2.30 P. M.

Milbourne's Newspaper Guide Book.

This list of all the publications of the United States and Canada, with descriptions, circulations and rates, published by Messrs. L. Jeff. Milbourne & Co., 163 W. Baltimore street, Baltimore, has been gotten up with much care as to detail, and appears to be carefully arranged and as correct as such compilations can be expected to be.

The Fair at Hagerstown.

The Washington County (and State) Fair was a great success, the displays of stock, machinery, etc., being large and the attendance good.

Can Lands be Made Rich With Artificial Fertilizers?

The Deer Creek Farmers' Club met October 4th, at the residence of Messrs. Parker H. and James Lee. Mr. Lee's farm comprises over 225 acres, nearly all of which is in grass, grazing being a specialty. Mr. James Lee also farms two adjoining places, and altogether has the care of nearly 500 acres of land. The home farm is one of the finest in the State. The fields are admirably situated, with water in all of them, and the farm buildings are large and well arranged for the accommodation of a large number of cattle.

The club in a body looked at and admired Mr. Lee's cattle, and upon re-assembling at the house the committee of inspection, consisting of Messrs. Benj. Silver, Jr., S. B. Silver and B. H. Barnes reported. Mr. B. Silver said this might well be called the model farm of Harford county. Mr. Lee lately sent away about 18 fine fat cattle and has as many more ready to go. The most of the latter will be shipped to Europe. He also has a nice lot of stock cattle, 60 in number, and 20 more on an adjoining place. A yearling calf was pointed out which weighs over 900 lbs. Mr. Lee has made several improvements since the club last met at his place. He is building a new dwelling house on a beautiful site; has erected a Fairbank's cattle scales, which he has protected by a substantial shed, and has put up 475 panels of new fence. Too much praise cannot be given to him for the admirable manner in which all his farm operations are done and the excellent arrangement of the buildings.

The question discussed was: "Can land be brought to the highest state of fertility without the use of barn yard manure?" And we take our report from the *Eggs*.

Mr. James Lee said: Barn yard manure is the only reliable fertilizer. It needs no chemical test to tell you what effect it will have upon the crop to which it is applied, or whether or not it will benefit the land. This cannot be said of any commercial fertilizer. With no other fertilizer can you constantly crop, and at the same time improve your land. I know of no better illustration than our gardens and the large truckers around the cities. It is said that they cannot raise a very large crop of vegetables with any other fertilizer. So says Peter Henderson, and most of us are willing to take him for authority. The great point is to get all the benefit of all the manure. Then the question would naturally come up, when and how to apply this manure? The first point, when to apply the manure, I think is easily answered. As far as my experience and observation go, I would say, any time, from the first of January to the 31st of December. As to the best manner of applying manure, I should prefer spreading it on grass land, immediately after hauling it to the field. It is very important to spread it evenly. A great deal, perhaps one-half, of our manure goes to waste in the form of liquids. The question is, can our lands be brought to the highest state of fertility without the use of barn yard manure? I can answer that question by what I have observed around my own county. I know of no farm made rich except where cattle have been kept, either as a dairy or stock farm, and I have seen a number of them greatly improved by such treatment. As our question does not take into consideration the expense, I feel absolutely sure that it can be done by the use of barn yard manure if used in sufficient quantities, and I am very doubtful if any amount of commercial fertilizers, used alone, would bring our lands to the highest state of improvement.

Benjamin Silver, Jr., would answer the question in the negative, but land can be brought to a high state of fertility, if not the highest, by commercial fertilizers. Take a poor farm, plant it in corn, follow that by

clover, plow the latter down and you can raise 14 barrels of corn to the acre without fertilizers. He believed in bone dust but had seen good results from cheaper fertilizers, such as South Carolina rock, for instance. He had also made good crops with a low grade of Oriole phosphate as with bone. Land can be brought to yield 20 bushels of corn to the acre by the use of commercial fertilizers, but at greater cost than by barn yard manure.

Geo. E. Silver said: You might have two fields, each raising 20 barrels of corn to the acre and they would not be in the same condition after the corn is taken off.

Judge Watters said the test of fertility was the ability to take off large crops year after year.

John Moores asked if 20 barrels of corn to the acre had ever been grown without barn yard manure.

R. Harris Archer believed you could take a sedge field, and if not limited in time and expense, bring it to the highest state of fertility.

S. B. Silver said barn-yard manure is a standard fertilizer, but he would be sorry to think you could not bring a farm up without it. Commercial fertilizers properly applied and the land properly farmed will give average crops, and equal to lands on which barn-yard manure has been used. Parts of every large farm, distant from the barn, never have barn yard manure put on them and yet good crops are raised without it. It will cost more to bring land up to the highest state of fertility with commercial fertilizers. He doubted, too, if the land would have the same body as if improved with barn yard manure. If he could get enough barn yard manure he would never apply any other kind.

Bennett H. Barnes believed that land could be brought to the highest state of fertility without the aid of barn-yard manure. He preferred bone dust and kainit to phosphates. He would say that land which will grow from 18 to 20 barrels of corn and from 25 to 30 bushels of wheat to the acre, was in a high state of fertility, and this could be done by commercial fertilizers.

S. M. Lee said that if a man undertook to put up land by commercial fertilizers alone, a receiver would soon be appointed for him. He had seen lands of fair quality improved with clover, plaster and bought fertilizers, but the principal matter was the clover. To make ground rich you must have vegetable matter in it. Start that and return it to the ground again. If it were possible to make ground produce large crops with commercial fertilizers, whenever you stop applying them the ground soon becomes unproductive. Land may be put up by returning green crops and the use of plaster, but to get body in it, you must use stable manure.

Wm. Webster said land could be brought to a high but not the very highest state of cultivation without the use of barn yard manure. It makes no difference when barn yard manure is applied. It can always be relied on, but in the application of commercial fertilizers you must be particular. You can't get body in the land without barn yard manure. Lands require certain elements and farmers have to buy three or four times as much of other things to get what their land needs, but barn yard manure contains just what crops require. In the valleys of the Western States and the Sacramento valley the manure is destroyed, and yet the fertility is inexhaustable. There is a great accumulation of grass, which falls down and rots and wild animals graze over it. Work our lands for ten years without fertilizers and they would go back. Commercial fertilizers have their advantages and disadvantages. He would not advise any young farmer whose land will produce 20 barrels of corn to the acre to cease fertilizing. A light application of straw to the land if kept

up for twenty years would give more body and strength to the land than commercial fertilizers would. Shade will improve land, but he could not tell why.

S. M. Lee said it is supposed by some that the increase of fertility in ground shaded by brush, straw, etc., is due to the origin and decay of countless animalcules between the covering and the ground.

S. B. Silver had never thought straw had any lasting qualities as a fertilizer. On his farm a straw rick had rotted down. The first year the spot was plowed it yielded a tremendous crop of corn, and the second year the crop was good, but after that you could not notice that any rick had been there.

John Moores said some lands can be brought to a high state of fertility by the use of commercial fertilizers and others cannot. The most of our lands, however, can be made productive by a regular system of farming, with a very small amount of fertilizers. The system would consist of wheat, grass and grazing.

Geo. J. Finney's opinion was that if not limited in expense land can be brought to a high state of fertility by bought fertilizers as by barn yard manure, and he did not see why it would not be as lasting. Take the same quality of land, and use the same diligence and foresight, and farm with the same care, and you will have equally good results from commercial fertilizers as from barn yard manure, but the cost would be greater. There is nothing equal to barn yard manure to make a crop, but he did not think it follows that bone dust would not bring as good a crop.

Judge Watters remarked that all he might say would merely be a repetition of what Mr. S. M. Lee had said, but in a different form.

In the first place we must determine what is meant by the highest state of fertility. If the standard is the raising of any particular crop all will agree that it can be done with artificial fertilizers; but his idea of the highest state of fertility is land that will produce large crops without any addition to it. Ideal farming would be to have land like Deacon Jones' wonderful one-horse shay, that was so perfectly adjusted in all its parts that when it broke down, it went all to pieces at once. So with the land—to have it that the last crop would be as good as the first. Our poor land is poor not because it is deficient in all the elements of plant food, but because some elements are exhausted faster than others. The best way to restore fertility is to get material from plants. If we could find out what was needed and get it from some other source you might make the land productive. In barn yard manure you get all the elements in the proportion required for plants. In bone dust, also, you restore to the land what came from it. There is no virtue in the barn yard. If you allow me to use everything that constitutes barn yard manure, you may take away the barn yard. If you add the one or two elements lacking you will restore the fertility for some time but can't get land to the highest state of fertility. As to enriching land by shading it, he thought that was due to chemical action in the ground itself.

S. M. Bayless said his opinion was that you want barn yard manure to make land rich. He keeps cattle with that view. Bone dust is good for wheat but he could not see that it was much good for corn.

Judge Watters advised the application of bone dust, sowed on grass, one or two years before plowing for corn.

R. H. Archer hoped that it would not be inferred that any member of the club did not approve applying barn yard manure to land, but he would answer the question decidedly in the affirmative, taking the raising of our staple crops, corn, wheat and timothy hay, as a standard. He instanced a piece of land which for 30 years had not had any fertilizers

except the manure from one cow, which when plowed and dressed at the rate of 1,000 lbs. of bone dust per acre gave as fine a crop of grass as he ever saw. He contended that 20 barrels of corn or 3 tons of timothy hay to the acre can be raised by the use of commercial fertilizers and he did not think barn yard manure could do more. The latter is no doubt the best but you cannot get enough of it.

Geo. E. Silver said the question had been discussed in a one-sided manner, that barn yard manure is the thing and it is almost impossible to bring up land and retain its fertility without it. But he believed in the use of artificial manures.

Thomas A. Hays thought land could be brought to a high state of productiveness by commercial fertilizers, but it can not be brought to the highest state of fertility without barn yard manure and grass. He said there was a distinction between productiveness and fertility. By the latter term he meant the quality of producing large crops continuously.

Wm. Munnikhuyzen had seen land farmed constantly and no stock kept, which had produced good crops for a hundred years. The lands he referred to were in Louisiana. Black-eyed peas were turned under instead of clover. If straw and grasses were spread over our lands, with the use of commercial fertilizers, they would retain their fertility as well as with barn yard manure. The tramping of stock on our grass lands is of great benefit. There are fewer noxious weeds where commercial fertilizers are used. He would not advise any farmer to waste barn yard manure, but he did not think it essential, in order to improve land.

A paper by Mr. Albert Neilson, of Baltimore, was read, in which the vast resources of India for raising wheat were shown. There are 14,500 miles of railway in that country and a region comprising 600,000 square miles, well adapted to raising wheat. It is argued that if the English government would open these military railroads to general use Indian wheat can be grown and carried to London for less than 40 cts. a bushel.

Messrs. W. Scott Barnes, Hargraves Spalding and Wm. B. Hopkins were elected active members. The club adjourned to meet at Mr. Johns H. Janney's, November 1st. The question for discussion is: "What system of training should we adopt to make Farming attractive to our boys?"

Home Department.

RECREATIONS OF A COUNTRY HOUSEKEEPER—NO. 11.

"Try the Vice Versa on Them."

"Poor Marcus! Wouldn't you say that the weight of bread was heavy on him, as Jane Welsh puts it?" laughed Daisy, as the hearty applause that followed the reading of his mournful experiment of housekeeping died away.

"I would, indeed," returned a chorus of voices. "And yet, if you could just see what a thoroughly 'convinced man' Marcus is, and how penitent and sweet he feels about it, you couldn't have the heart to laugh at him. He didn't get wholesomely well, so that he could be touched upon the galled spot for some days. But last Sunday evening, as we were sitting together in the library, if you could have seen him, you would have been really touched. We were just talking on, in the very healthiest confidence about the mistakes that man and wife so often make in life, not by being deliberately cold and cruel, but simply from the terrible fault of not understanding each other, and when they find that *is* the fault, not setting themselves to work deliberately and conscientiously to study out the tastes and temperaments peculiar to each, so that they can be handled tenderly or let alone judiciously as

the case may require, when all at once Marcus darted off into the next room and when he came back he walked straight up to me with that MS. and laid it on my lap. Then with the simplicity of a little child he said: 'There, sweet heart! I had a hard time over that little lesson; but I believe now I've got it by heart. It's only justice to you and to myself, too, that you should have the benefit of it. And if you think my experience would do anybody else good, I'd read that true story of mine out to the 'Grange."

"Thee must tell him to read it then," said Deborah Fry, persuasively. "Thee sees there is a grave side as well as a comic side to Marcus' home lesson, and it would be well if the inattentive and the inconsiderate husbands could learn it before it is—as it so often is—too late."

"Before they have to say, like Carlyle (we had been reading the life and letters of Jane Welsh Carlyle in our society and were highly delighted with the book): 'Heavens! and alas! over my poor darling, my dear little woman, who was left among the household irritations—victimized, unhelped—painful to remember.' After all, the tears and sighs and pathetic lamentations come too late to be of any avail."

"Poor Jane Welsh!" continued Mrs. Mackey, fingering the book as it lay on the table. "As touching and tender a memorial, it seems to me, as ever was laid on the domestic altar. A book that was decidedly needed, too, I should say, and one that will always dear to every nervous, overtaxed, unappreciated woman's heart."

"O, but that's the way with all the men," retorted Daisy. "They never see till it's too late, that is, not unless you make them see, unless you break them in just as Dolly did."

"Marcus broke himself in," Dolly added, "and wise fellow that he is, he broke the neck of one of his pet opinions in the same yoke. Nothing like turning the tables on the men, you see, Daisy (with a merry laugh), just so you do it gracefully and convincingly, as my old grandmother used to say. Her favorite and famous expression was: 'Try the VICE VERSA on 'm, child.' Dear old lady, I can hear her now, as she delivered her wedding advice to me: 'Mind, love, it is a fact in home history, that men are, as a general thing, domestically blind, and it is woman's special duty to anoint their eyes and to make them see—all in a pretty way of course; mind, Dolly! I am emphatic here; it must all be done in a *very* pretty way, or else they may always regret that they ever got their eyes open."

"Upon my life it is a splendid idea," rejoined Daisy, eagerly. "TRY THE VICE VERSA ON THEM! Nothing could be better. You know they are always saying: 'I don't see it in that light, my love.' Talk to them as you will about women's work, they haven't a bit of sense about it. 'Can't see it for the life of me, my dear.' That's a favorite phrase with them. Can't see how women have any trouble housekeeping—can't see how women have any trouble baby-keeping, nor cook-keeping, nor any other sort of keeping that the poor women have to do. Don't tell me about it. If there ever was a subject on which men are bat-blind, mole-blind, man-blind (worst blind of all), that subject is the work of women in general, and the home work of women in particular, as I have said a hundred times before; and bless the woman, I say now, that can open their eyes and make them see. Nothing like grandmother's remedy: 'Try the vice versa on 'm!'"

"A right hard thing to do *sometimes*," remarked Sister Pine, *sotto voce*. It was the nearest approach to a joke we had heard from her and, said in her cut and dried little way, was quite irresistible.

"Daisy, my dear," Mrs. Ingleside dashed in abruptly, not at all noticing our little side play, "you never lose an opportunity of airing your eloquence on that everlasting in-

teresting theme. But we will not sit by and hear the men abused, and I thought you and all of us were quite informed by this time, that one of the main objects of our sisterhood, here, is to open our eyes to our own faults and not to be so desperately attentive to the beam that is in our brother's eye. We want to make good, honest standing ground for our own feeble feet where we need not be treading on the men's toes forever and ever. That is one of the fashions of female justification, as you well know, that we SOUTHERN SISTERS do not hold to and will never give in to. We do not want to pull man down, but to lift woman up, and to strengthen her inwardly and outwardly, so that she can stand by his side on the higher plane."

Just here Mrs. Ingram—the Boston friend who had lately joined us—looked up from her work with appeal, if not protest, in her eyes.

"No," Mrs. Ingleside continued vigorously, "it is not man's fault when woman does not succeed. It is her own fault, and the sooner she recognizes the fact and acts on it the better for her and for her future. It is high time that all this cant about want of opportunity and want of appreciation be put a stop to."

"But it was no mere causeless cant in past years, Mrs. Ingleside," interrupted Mrs. Ingram with irrepressible interest. "In all the long ages back, indeed until within the last twenty-five years, it was no cant that women were jeered and laughed at for so much as dabbling in letters, or even attempting in any way to raise the standard of female education."

"You say 'even attempting,' but it was the *unseen* attempting was it not, dear Mrs. Ingram, that generally made their efforts ridiculous, and is it not the 'dabbling in letters' that is still the object of men's ridicule and contempt?"

It was Dolly who said this, and Mrs. Ingleside, noting with satisfaction D.'s growing gravity of remark, answered promptly:

"Exactly so, my dear. When women set themselves to work, not artificially, nor superficially, but honestly, earnestly, and with the all engrossing determination and energy to CONQUER SUCCESS for themselves, just exactly as the men have to do, it will come to them, and not before. Success is the terminus of a long, hard road where all go barefooted, and all have to brave the stones and clods and thorns and briars."

"Except those that nature shoes," Dolly suggested.

"The success I mean goes barefooted," rejoined Daisy, eagerly. "TRY THE VICE VERSA ON THEM! Nothing could be better. You know they are always saying: 'I don't see it in that light, my love.' Talk to them as you will about women's work, they haven't a bit of sense about it. 'Can't see it for the life of me, my dear.' That's a favorite phrase with them. Can't see how women have any trouble housekeeping—can't see how women have any trouble baby-keeping, nor cook-keeping, nor any other sort of keeping that the poor women have to do. Don't tell me about it. If there ever was a subject on which men are bat-blind, mole-blind, man-blind (worst blind of all), that subject is the work of women in general, and the home work of women in particular, as I have said a hundred times before; and bless the woman, I say now, that can open their eyes and make them see. Nothing like grandmother's remedy: 'Try the vice versa on 'm!'"

"Not often, my dear Madam!" Mrs. Ingram interposed, shaking her head gravely. "And you must confess that the circumstance of being a woman is one of the main disadvantages against which she has everlastingly to contend."

"Pardon me, Mrs. Ingram. I can confess no such paradox. If the Almighty had intended her to be a man, He would have made her into one at the beginning. I think that view of the case comes from quite another circumstance—I mean a habit we are fallen into nowadays of getting matters *a little too much mixed*. There is surely room enough in this world for both men and women, with the largest possible growth allowed for each. But there is one thing I do confess to, and that is, that until women infuse a stronger element into their work than this puerile whining over their natural condition and this jealous railing against the men on account of their higher standing ground, there is not much chance of success being attained."

"My dear Madam," returned Mrs. Ingram,

"How is it possible to avoid or to disavow such self-evident truth—particularly when it is so constraining and condemnatory as it is here. Do not you observe what unjust discrimination is made against woman's work everywhere? Does government ever pay for her work as it does for man's? Do editors? Do merchants? Do employers of any sort or condition?"

Mrs. Ingleside said: "The question here is this: Is her work as well done as that of the man? You remember, Mrs. Ingram, when woman enters the domain of public work, she enters an arena that is soulless and inexorable. Does the work speak for itself? Is it out and out first-class work? Not: Is it good work, *for a woman*? There is no such sympathetic clause in its stern catechism. Its exactions are absolutely relentless."

"Far more so to women than to men!"

"I don't know positively about that, Mrs. Ingram. Of former ages and of some other countries the complaint is just. But I hardly think we can admit it at this our day or this our land. Patient, pains-taking, well-done work is telling everywhere; and when woman's work gets to be as well-done work as man's, she'll come to be as well paid for it. Mark my word! And I think the improvement in her condition in every way justifies the hypothesis."

"HYPOTHESIS truly," laughed Mrs. Ingram. "My old teacher used to define hypothesis as the *baseless* fabric of a vision."

"Hasn't the last twenty-five years been witness enough of what progress woman may make. Indeed has she not positively gained ground enough in that time to build such a conclusion upon? Who can say in the next twenty—" Just here the conversation was cut short. The opinions of the debaters was asked for to decide upon the size and shape of a garment we were making for one of our over-busy sisters, which Mrs. Mackey was holding up for observation.

"Let her try it on," was the decision.

"O, yes!" flashed in Dolly, merrily. "Let the sister try on the soft garment. But don't let us forget to *try the vice versa on the men*. The best suit they ever wore."

SISTER TARPLEY.

Bread Making.

The directions for making bread here given are the same as those followed by an old-time, south-side Virginia cook, says *Harper's Weekly*, and the bread made by them has often taken a prize at State fairs in antebellum days:

Bread—Sponge—Two roasted potatoes, mashed fine while still warm; half a pint of flour; two tablespoonfuls of white sugar; half a pint of cold water; half a cake of compressed yeast, dissolved in one-fourth of a cup of lukewarm water.

Bread—Four quarts of flour, four tablespoonfuls of lard or butter, eight tablespoonfuls of white sugar and one tablespoonful of salt, sifted together; three pints of water; the risen sponge. Half a pint of flour to use in kneading; lard to grease the tops of the loaves and rolls.

For rolls to be eaten at an eight o'clock breakfast begin the sponge at two or three o'clock of the previous afternoon by mashing two roasted potatoes very fine and light. This is more easily done while they are still warm. Roasted potatoes will be more mealy and will make a much lighter sponge than will boiled potatoes. When the potatoes are smooth and thoroughly mashed, add to them half a pint of flour, half a pint of cold or lukewarm water and two tablespoonfuls of white sugar. Beat this mixture briskly for five or ten minutes, or until bubbles begin to appear; then stir in half a cake of Fleischman's compressed Vienna yeast, dissolved in one-fourth of a cup of water (or use half a cup of good home-made yeast), and set away to rise in a warm place. The pail should be

carefully covered so as to exclude dust and air, and the sponge, should, if possible, rise for five or six hours. By this time it should have increased in bulk nearly four times. (Very fair bread may be made with sponge which has only doubled in size.)

If all things have gone well, the sponge will be ready for you to make up the bread at about eight o'clock in the evening. A large mixing bowl of earthenware is perhaps best for this purpose, though many use a large tin dish-pan or wooden tray. Whatever you do use should be kept for bread only, and be scrupulously clean. Into this "mixing dish" sift four quarts of flour, eight tablespoonfuls of white sugar, and one tablespoonful of salt; rub fine in this four tablespoonfuls of fresh lard or butter, using a wooden spoon, chopping knife or the hands, and add the risen sponge and as much of the three pints of water as may be needed to make the dough, which must be kneaded for three-quarters of an hour; the longer and the more thorough the kneading, the finer will be the grain of the bread.

There are several ways of kneading, indeed, nearly as many ways as there are bread makers. The means employed are of no great importance, so long as the desired object is attained, viz., the thorough mixture of the various ingredients, with the addition of as much air during the process as is possible. Perhaps the easiest way to secure a good result is this: Flour a bread or moulding board lightly, flour the hands also, turn the dough out of the mixing bowl in as compact a mass as possible, flour the top of it lightly, and then with the palms of both hands press down upon the dough, and at the same time push it a little away from you, bringing the whole mass back to its original place by a clawing motion with the ends of the fingers. This "rocking" motion is the secret of successful kneading. A few such kneadings will turn the ball of dough with which you began into a long and narrow roll, with a fold running down the length of it; this must be turned at right angles to its former position, keeping the fold on top, and this operation repeated as often as the kneading shall render it necessary. The reason for keeping the fold on top is that by it the air is introduced into the dough, each folding imprisoning a fresh supply, which it is the kneder's object, of course, to work into, not out of, the dough. Elasticity is the main requirement of good kneading. Care must be taken to prevent the dough from sticking to the board; very little flour will be needed for this if the kneder is quick motioned. If the dough does stick, pull it up and off the board with a quick motion. This generally leaves the board free, and ready for a fresh dusting; but if by any chance some dough should still adhere, carefully scrape it from the board with a dull knife before attempting to flour the board. These scraps are very good chicken feed, but must never be put back into the bread.

It is better, we think, to use too much flour in learning to knead bread than too little. A beginner is terribly discouraged by a thorough paced stick on the part of the dough, and a very few experiments will show her that by being quick in her motions, and using a very little flour often, she can arrive at precisely the same result as where she used twice the quantity of flour, and her bread will be tender instead of stiff and dry. When the dough has been kneaded enough, the whole mass will be smooth of surface, elastic to the touch, and will have gotten over its tendency to stick to everything. The dough should then be set away for the night in a closely-covered bowl or crock, the sides and bottom of which have been well greased, and which is sufficiently large to admit of the contents more than doubling in size. Many grease the top of the dough; this prevents a crust forming over it, which must otherwise be removed next morning.

The temperature most favorable to bread at this stage of its existence has been found to be 78° F., at which temperature it should remain about eight hours. Avoid any draught of air upon the bread jar; and if the room where it is to pass the night is likely to become very much colder before morning, wrap the jar in a blanket, or have a "cosy" for it, as you have (or should have) for your teapot. The temperature of the mass must not fall below 45° F. If the thermometer registers more than 78° the bread will rise quicker; if less, more slowly than the time mentioned above.

Bread should always have a linen cloth under the wooden or metal cover, and the linen of this cloth should be smooth of surface, so that if the dough by any chance should rise against it, it may easily be detached. The sort of linen known as "glass crash" is excellent for this purpose.

At five or half-past five next morning the bread should be made ready for its second rising. The bread-board should be lightly dusted with flour (ditto the hands), and the light spongy mass which the bread jar now contains turned out upon it to be subjected to five or ten minutes' kneading such as it received yesterday, at the end of which time it will be ready to be "moulded" into rolls and loaves. For the former, cut from the dough a bit the size of a large egg, lay it in the floured palm of the left hand, and with the fingers of the right hand gather up and tuck in the ends, turning the lump as you do so, and making of the hollowed palm a mould which gives you presently a smooth hemisphere. Place this in a well greased biscuit pan, and repeat the operation until

you have as many rolls as you want. Be careful that they do not touch in the pan, and when all are in, grease the tops. This will prevent their forming a crust in rising, and insure the beautiful, tender, brown crust, when baked, which is at once the pride of the cook and the delight of all who eat her bread.

Butter, milk, or lard may be used to grease the tops, but the butter or milk will make the bread brown too quickly, and the crust will become stiff, and burn very readily; fresh, sweet lard is far better for this (as it is indeed, wherever shortening is used in bread) than anything else.

Loaves are made up very much in the same way as rolls, the size being regulated by that of the pans used for baking, which should be about half filled by the dough when first put in.

They should rise about an hour before baking, whilst rolls must rise a longer time, and for this reason: The heat of the oven very quickly penetrates the roll and checks the growth of the yeast plant, whereas in the loaf it takes some time for the heat to penetrate; a loaf, therefore, rises more in proportion to its size, after going into the oven, than does the roll.

Bread bakes best at a temperature of from 400° to 500° F., or when a teaspoonful of flour will brown in two minutes if spread on a small tin plate and placed in the oven. This "two-minute" oven is what you want for rolls; a "four-minute" oven is better where loaves only are to be baked. Practice will very soon enable the bread-maker to feel when the heat of her oven is right. Rolls take from fifteen to thirty minutes, according to their size, and loaves from fifty to seventy minutes, to bake properly. With bread, as with meat, the oven should be hotter for the first five or ten minutes of the

time, than afterward. Many good cooks leave the bread in the oven for five to ten minutes after they think it done, with the oven door open. This they call "soaking" the bread.

The quantity of liquid in the foregoing receipt has been proportioned as nearly as possible to the "new process" or Hazall flour. If old process pastry flour be used, one-eighth less fluid will be required. It is not practicable to give the exact measure of liquid, since there is such great difference in the absorbent qualities of different brands of flour. Experiment alone will show how much water exactly must be used in making a dough from any given brand of flour.

The sum up, the sponge should rise in a warm place for five or six hours, and should quadruple in bulk.

The bread should be kneaded from a half to three-quarters of an hour, using as little flour as possible. It should then rise from six to ten hours in a closely-covered pan or jar, the temperature should vary as little as possible from 78° F., and the dough should fully double in size. It is then ready to be worked over and moulded into rolls. This second kneading need only be for five minutes. The rolls and loaves should have their tops well greased before being put in a warm place to rise for an hour or an hour and a half; they should then be baked, the rolls from fifteen to thirty minutes, and the loaves an hour or longer. If only rolls are made, bake in an oven which will brown a teaspoonful of flour in two minutes; if both must be baked at the same time have a slow oven; but it is better to let the loaves wait a half hour longer before baking than to bake the rolls in a slow oven. Both rolls and loaves should double in size before baking.

Page's Traction Engine and Farm Locomotive.



which they roll, forming in this way a movable road-way of its own. This chain is a series of heavy blocks, the apex upwards, and with a broad base, the area of which on each is about 84 square inches. The weight of the engine instead of resting upon a few points on the periphery of the four wheels is thus maintained upon a broader and firmer foundation, and the tendency towards slipping, which is one of the practical defects of traction engines, is entirely obviated, the endless chain operating to give a firm and immovable base for the engine to move along upon.

This engraving will show the changes in the mechanism of the engine, and which will be more evident from a comparison between the old form, which is also illustrated.

In Messrs. Page's engine as now constructed there is an advantage in the newly adopted feature by which the tendency to slide back and to tear up the ground, heretofore encountered in such machines, is overcome by the chain and the adaptation of which in use on muddy or slippery roads, etc., is one of the most important advantages claimed for its use. This provision also is thought to lead to its more effective employment in plowing, as the chain makes a road-way for the engine by the increased tractive force obtained.

Messrs. Page & Co. have made many trials with their engine in steam plowing, all with satisfactory results.

In THE AMERICAN FARMER some years ago we gave an account with an illustration of the traction engine of Messrs. Geo. Page & Co., of this city, and expressed our opinion that such machines were about coming into general use and favor. Their general introduction since that time has become an accomplished fact, and the improvement of these engines and their adaptation to the uses of agriculture is now an every-day affair. We give a cut showing the Messrs. Page's engine as first constructed and another showing the improvements.

The main change has been to increase the tractive force so that it will travel over sandy and soft roads. This new device consists of an endless chain connecting the four wheels and on



Baltimore Markets—Nov. 1.

Breadstuffs.—**Flour.**—The market is dull and nominally steady. We quote as follows:

Western Super, \$2.25@2.75; Western Extra, \$2.50@3.50; Western Family, \$2.75@4.75; City Mills Super, \$2.50@3.75; City Mills Extra, \$3.00@3.75; City Mills Rio Grande Extra, \$4.00@4.50; Winter Wheat Patent Family, \$5.25@6.00; Spring Wheat Family clear, \$5.50@6.00; Minnesota Patent Family, \$5.50; Baltimore Winter Wheat Patent, \$6; Baltimore High-Grade Family, \$5.50; Baltimore First-Grade Extra, \$5.50; Baltimore Second-Grade Extra, \$5.

Wheat.—The market for Southern is quiet and firm with a fair offering, and good demand from millers for choice samples. Fair samples sold at \$2@22 cts., and good to prime Fluits \$5@66 cts., and choice at 90 cts. Prime to choice longberry brought \$4@95 cts. The market for Western ruled a shade lower, closing quiet and easy in tone. After Change there was a fair business, while the market ruled steady and lower, closing as follows: 8 1/2@8 1/2 for spot \$1 1/2@8 1/2 for November, 22 1/2@23 1/2 for December and 25 1/2@26 1/2 for January delivery.

Corn.—The market for Southern is quiet and generally easy, with a moderate inquiry. New white sold at 50@55 cts., for damp to fair, old at 54 cts. for good and new; yellow at 50@55 cts., and old at 55 cts. The market for Western was very quiet. After Change the market was dull and easy, closing as follows: Year 47 1/2@48 and January 46 1/2@45 1/2.

Liv. Stock—Beef Cattle.—Trade has been fair and the prices generally without serious change. Prices ranged as follows: Best, \$2.50@6; medium or good fair quality, \$2.25@2.50; ordinary this Steers Oxen and Cows, \$2.25@2.75. Extreme range of prices, \$2.25@2.6. Most of the sales were from \$2@2.50 per 100 lbs.

Swine.—The supply is fair, and about equal to a moderately good demand. We quote common to fair Hogs at 60@70 cents, and good to extra at 7 1/2@8 1/2 cts. per lb.

Pure Dissolved S. C. Bone.—Craftsmen and dealers may find this a good market for Bone Meal.

Ammoniated Dissolved Bone.

Pure Dissolved Bone.

POWELL'S TIP TOP FERTILIZER.

POWELL'S POTATO PRODUCER.

Powell's Bone and Potash Fertilizer

Everything connected with Fertilizer business of best quality. For Sale Cheap.

Send for Pamphlet and Samples.

BROWN CHEMICAL CO.
16 LIGHT STREET,
BALTIMORE, MD.

STROUBRIDGE SOWER

BROAD CAST

BEST. CHEAPEST. SIMPLEST.

C. W. DORR, Manager
RACINE SEEDER COMPANY, 199 FOURTH ST., DES MOINES, IOWA.

These Three Little Friends are going Travelling, and they want to visit all the Good Little Boys and Girls in America. Won't you Let us Come to Your Home? We will Start as Soon as you Send us 10 Cents to pay our way. Our wardrobe consists of 32 Pieces. Our Garments are of Every Fashion and Style. If you send us for we will go where you live, and amuse you all the year. Ask Mamma and Papa to send for us, and we will wear our Reception Dresses.

Only 15 Cts for 3 French Dolls

WITH AN ELEGANT WARDROBE OF 32 PIECES.

CHRISTMAS COMING.

With a pretty Little Boy and a Little Girl Doll in Each Box, with Pretty Faces and Little-like Beautiful Features, and their Wardrobe is so extensive that it takes hours to dress and undress them in their Different Suits. Every Child and every Mother that has seen them go in and out—cover them. Children will get more real enjoyment out of a Set of these French Dolls than out of a set of any other. Send us for we will send immediately for more. A Lady writes us that her Little Boy and Girl played for five long hours with a Set of these French Dolls, and they felt very sorry indeed to think that they must stop and eat their supper, and if mothers only knew how much amusement there is in these Dolls they would willingly pay double the price asked for them. Little Boys, come and get your Dolls with their Wardrobe of 32 pieces by mail for 15 Cts. The Dolls for \$1, you get \$1.50; 10 Dolls for \$15.00; 25 Dolls for \$30.00; 50 Dolls for \$45.00; 100 Dolls for \$60.00; 150 Dolls for \$75.00; 200 Dolls for \$90.00; 250 Dolls for \$105.00; 300 Dolls for \$120.00; 350 Dolls for \$135.00; 400 Dolls for \$150.00; 450 Dolls for \$165.00; 500 Dolls for \$180.00; 550 Dolls for \$195.00; 600 Dolls for \$210.00; 650 Dolls for \$225.00; 700 Dolls for \$240.00; 750 Dolls for \$255.00; 800 Dolls for \$270.00; 850 Dolls for \$285.00; 900 Dolls for \$300.00; 950 Dolls for \$315.00; 1000 Dolls for \$330.00; 1050 Dolls for \$345.00; 1100 Dolls for \$360.00; 1150 Dolls for \$375.00; 1200 Dolls for \$390.00; 1250 Dolls for \$405.00; 1300 Dolls for \$420.00; 1350 Dolls for \$435.00; 1400 Dolls for \$450.00; 1450 Dolls for \$465.00; 1500 Dolls for \$480.00; 1550 Dolls for \$495.00; 1600 Dolls for \$510.00; 1650 Dolls for \$525.00; 1700 Dolls for \$540.00; 1750 Dolls for \$555.00; 1800 Dolls for \$570.00; 1850 Dolls for \$585.00; 1900 Dolls for \$600.00; 1950 Dolls for \$615.00; 2000 Dolls for \$630.00; 2050 Dolls for \$645.00; 2100 Dolls for \$660.00; 2150 Dolls for \$675.00; 2200 Dolls for \$690.00; 2250 Dolls for \$705.00; 2300 Dolls for \$720.00; 2350 Dolls for \$735.00; 2400 Dolls for \$750.00; 2450 Dolls for \$765.00; 2500 Dolls for \$780.00; 2550 Dolls for \$795.00; 2600 Dolls for \$810.00; 2650 Dolls for \$825.00; 2700 Dolls for \$840.00; 2750 Dolls for \$855.00; 2800 Dolls for \$870.00; 2850 Dolls for \$885.00; 2900 Dolls for \$900.00; 2950 Dolls for \$915.00; 3000 Dolls for \$930.00; 3050 Dolls for \$945.00; 3100 Dolls for \$960.00; 3150 Dolls for \$975.00; 3200 Dolls for \$990.00; 3250 Dolls for \$1005.00; 3300 Dolls for \$1020.00; 3350 Dolls for \$1035.00; 3400 Dolls for \$1050.00; 3450 Dolls for \$1065.00; 3500 Dolls for \$1080.00; 3550 Dolls for \$1095.00; 3600 Dolls for \$1110.00; 3650 Dolls for \$1125.00; 3700 Dolls for \$1140.00; 3750 Dolls for \$1155.00; 3800 Dolls for \$1170.00; 3850 Dolls for \$1185.00; 3900 Dolls for \$1200.00; 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11700 Dolls for \$3540.00; 11750 Dolls for \$3555.00; 11800 Dolls for \$3570.00; 11850 Dolls for \$3585.00; 11900 Dolls for \$3600.00; 11950 Dolls for \$3615.00; 12000 Dolls for \$3630.00; 12050 Dolls for \$3645.00; 12100 Dolls for \$3660.00; 12150 Dolls for \$3675.00; 12200 Dolls for \$3690.00; 12250 Dolls for \$3705.00; 12300 Dolls for \$3720.00; 12350 Dolls for \$3735.00; 12400 Dolls for \$3750.00; 12450 Dolls for \$3765.00; 12500 Dolls for \$3780.00; 12550 Dolls for \$3795.00; 12600 Dolls for \$3810.00; 12650 Dolls for \$3825.00; 12700 Dolls for \$3840.00; 12750 Dolls for \$3855.00; 12800 Dolls for \$3870.00; 12850 Dolls for \$3885.00; 12900 Dolls for \$3900.00; 12950 Dolls for \$3915.00; 13000 Dolls for \$3930.00; 13050 Dolls for \$3945.00; 13100 Dolls for \$3960.00; 13150 Dolls for \$3975.00; 13200 Dolls for \$3990.00; 13250 Dolls for \$4005.00; 13300 Dolls for \$4020.00; 13350 Dolls for \$4035.00; 13400 Dolls for \$4050.00; 13450 Dolls for \$4065.00; 13500 Dolls for \$4080.00; 13550 Dolls for \$4095.00; 13600 Dolls for \$4110.00; 13650 Dolls for \$4125.00; 13700 Dolls for \$4140.00; 13750 Dolls for \$4155.00; 13800 Dolls for \$4170.00; 13850 Dolls for \$4185.00; 13900 Dolls for \$4200.00; 13950 Dolls for \$4215.00; 14000 Dolls for \$4230.00; 14050 Dolls for \$4245.00; 14100 Dolls for \$4260.00; 14150 Dolls for \$4275.00; 14200 Dolls for \$4290.00; 14250 Dolls for \$4305.00; 14300 Dolls for \$4320.00; 14350 Dolls for \$4335.00; 14400 Dolls for \$4350.00; 14450 Dolls for \$4365.00; 14500 Dolls for \$4380.00; 14550 Dolls for \$4395.00; 14600 Dolls for \$4410.00; 14650 Dolls for \$4425.00; 14700 Dolls for \$4440.00; 14750 Dolls for \$4455.00; 14800 Dolls for \$4470.00; 14850 Dolls for \$4485.00; 14900 Dolls for \$4500.00; 14950 Dolls for \$4515.00; 15000 Dolls for \$4530.00; 15050 Dolls for \$4545.00; 15100 Dolls for \$4560.00; 15150 Dolls for \$4575.00; 15200 Dolls for \$4590.00; 15250 Dolls for \$4605.00; 15300 Dolls for \$4620.00; 15350 Dolls for \$4635.00; 15400 Dolls for \$4650.00; 15450 Dolls for \$4665.00; 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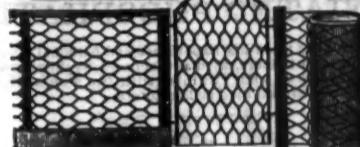
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